OPERATING PROCEDURE

MICROISOLATOR CYCLE

AMSCO Scientific

Eagle® Century Series

Sterilizer

(5-25-95) P-387344-292 Rev. 0

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A WORD FROM AMSCO

This manual contains important information on proper use of the Scientific Eagle Century Series Sterilizer. All personnel involved in the use of this equipment must carefully review and comply with the warnings, cautions and instructions contained in this manual. These instructions are important to protect the health and safety of personnel operating an Eagle Century Series sterilizer and should be retained in a conveniently accessible area for quick reference.

This sterilizer is specifically designed to process goods using only the cycles as specified in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for the recommended sterilization technique.

AMSCO carries a complete line of accessories for use with this sterilizer to simplify, organize and assure sterility of the sterilization process. Instrument trays, Vantage and DEXTEX wraps and biological/chemical monitoring systems are all available to fulfill your facility's processing needs. An AMSCO representative will gladly review these with you.

Service Information

A thorough preventive maintenance program is essential to safe and proper sterilizer operation. Comprehensive instructions for preventive maintenance can be found in the *Service and Maintenance Procedures,* provided.

You are encouraged to contact AMSCO concerning our Preventive Maintenance Agreement. Under the terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. AMSCO maintains a nationwide staff of well equipped, factory-trained technicians to provide this service, as well as expert repair services. Please contact your AMSCO representative for details.

Advisory

A summary of the safety precautions to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate the sterilizer until you have become familiar with this information.

This sterilizer is not designed to process flammable liquids nor liquids in containers that are not designed for sterilization. Any alteration of the sterilizer which affects its operation will void the warranty and could violate state and local regulations and jeopardize insurance coverage.

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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Warnings and Cautions in the Operating Procedure that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

Microisolator Cycle Operation

⚠ WARNING - EXPLOSION HAZARD: Do no operate this sterilizer in the presence of flammable compounds.

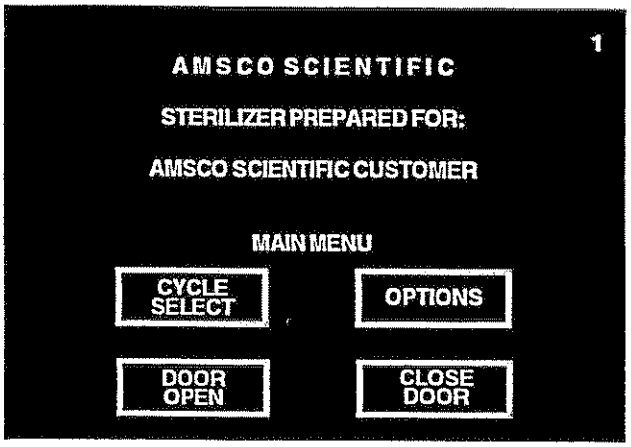
⚠ WARNING - EXPLOSION HAZARD: This sterilizer is not designed to process flammable liquids.

⚠ WARNING - BURN HAZARD: When sterilizing liquids, you must observe the following procedures:

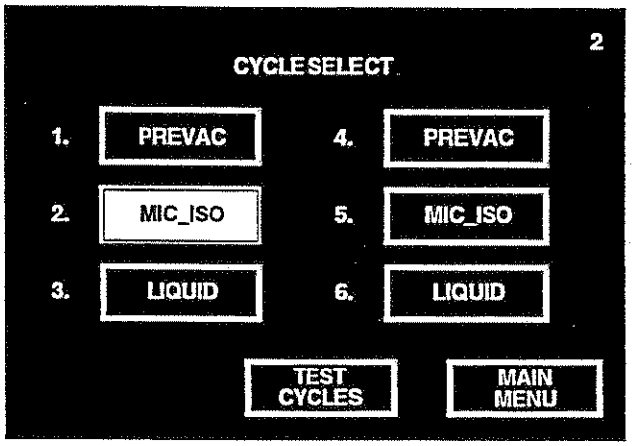
- **Use LIQUID or AIRCOOL cycle only.**
- **Use only Type I borosilicate glass bottles.**
- **Do not allow hot bottles to be jolted.**

The Microisolator cycle is designed for sterilization of Microisolator type loads (bedding, feed, water bottles and cages) from 100° to 125°C (212° to 257°F).

1. Before running this cycle, refer to "Before Operating Sterilizer" and "Load Sterilizer" at beginning of this section.
2. Press **CYCLE SELECT** on screen #1.



3. Press **MIC_ISO** button.

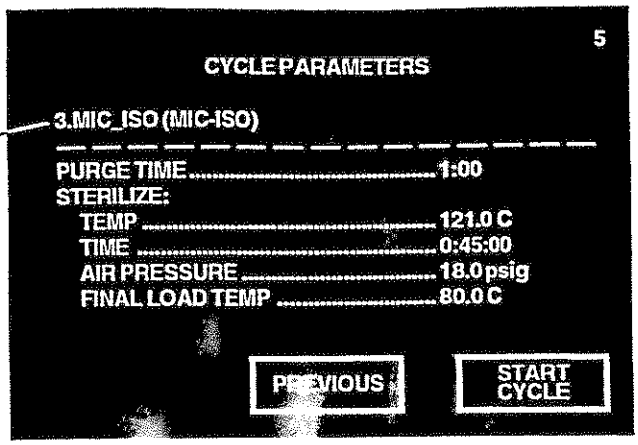


Pressing TEST CYCLES advances display to screen #3.

Pressing MAIN MENU returns display to screen #1.

4. Verify cycle parameters listed for the selected Microisolator cycle are acceptable.

   If listed cycle parameters are not acceptable, press PREVIOUS button and refer to Microisolator Change Values, for instructions on changing cycle parameters.



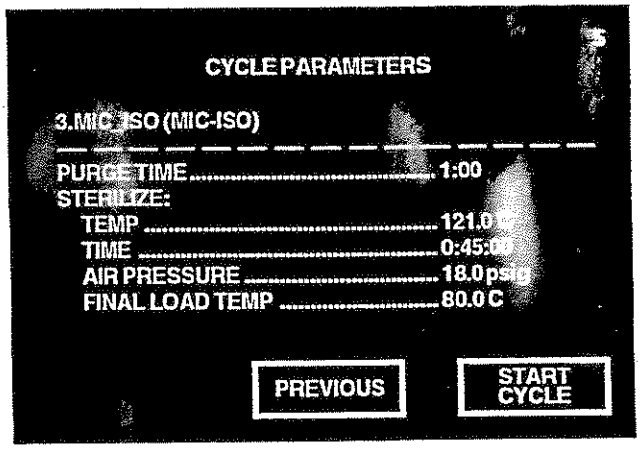
Cycle Name (Cycle Type)

Pressing PREVIOUS returns display to screen #2.

5. To begin Microisolator cycle operation, press **START CYCLE**.

NOTE: If START CYCLE is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect the cycle after door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.



Pressing PREVIOUS returns display to screen #2.

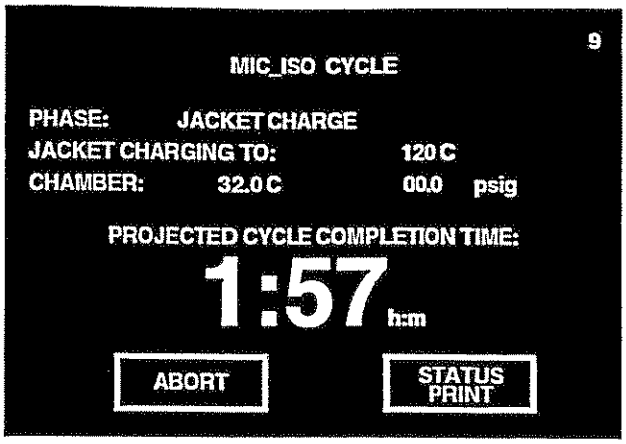
6. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance, Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

NOTE: Refer to cycle graphs for valve actuations.

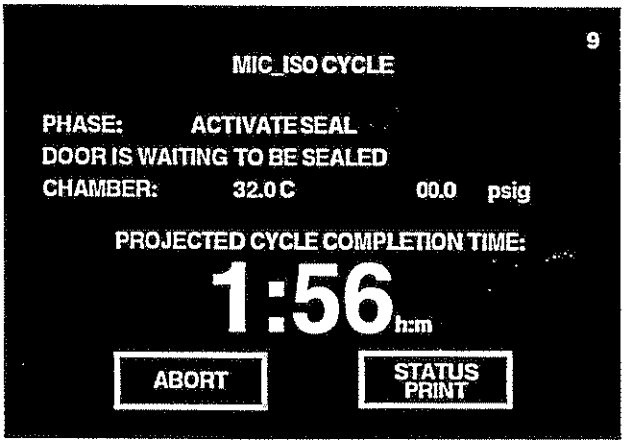
- **Jacket Charge** - Jacket charges with steam to 1° less than the programmed jacket temperature.



Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

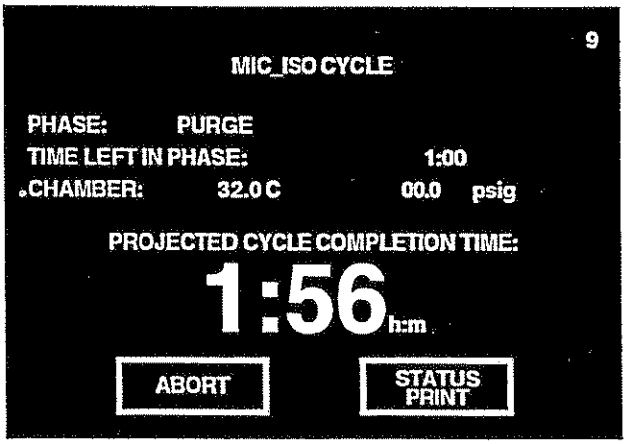
- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.



Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

- **Purge** - Steam flows through the chamber for the programmed time interval.



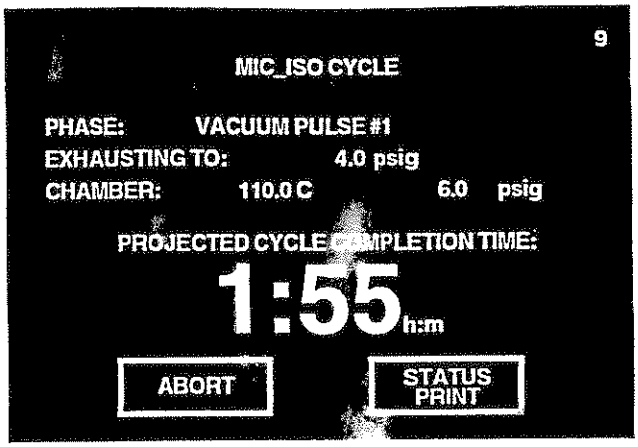
Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Vacuum Pulse Exhaust** - Chamber is exhausted to 4 psig.

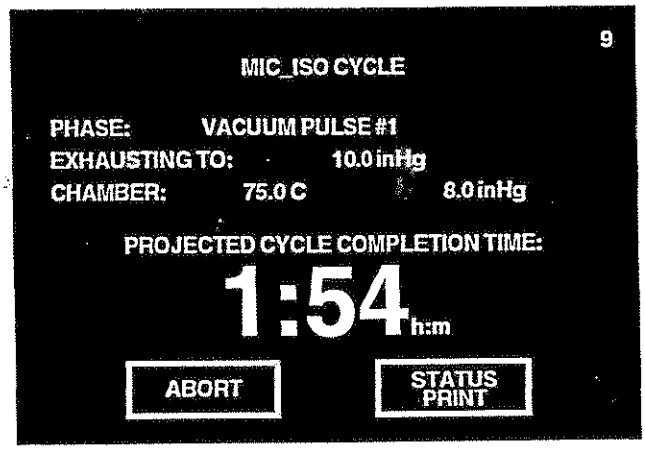


Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

NOTE: The sterilizer can be programmed to pull up to 99 pulses during the prevacuum portion of the cycle.

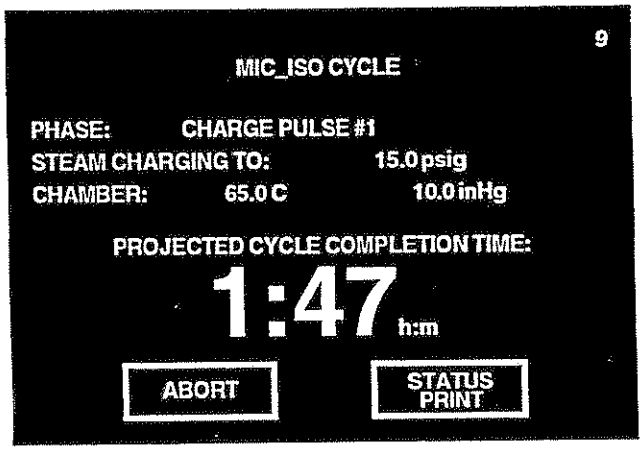
- **Vacuum Pulse Evacuate** - A vacuum is drawn in the chamber to the programmed minimum pressure parameter.



Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

- **Charge Pulse** - Chamber charges with steam to the programmed maximum pressure parameter.



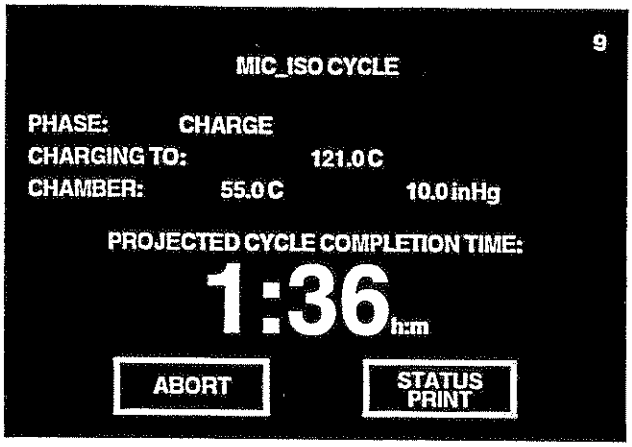
Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

- **Charge** - After the last prevacuum pulse, chamber charges with steam to the programmed sterilize temperature.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

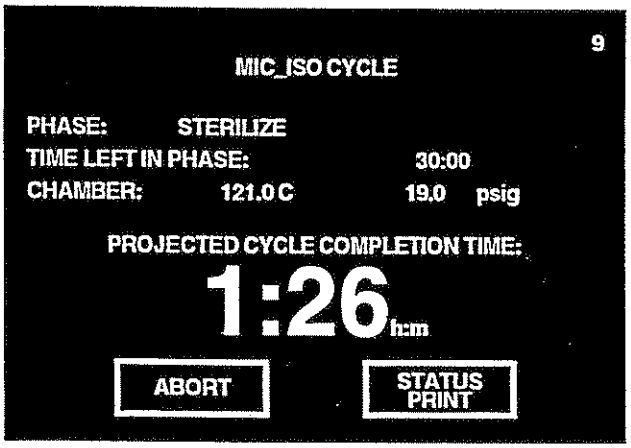
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than the programmed sterilize temperature. Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-chamber valve is regulated to maintain the chamber at the sterilize control temperature (control temperature = sterilize temperature + overdrive temperature).

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

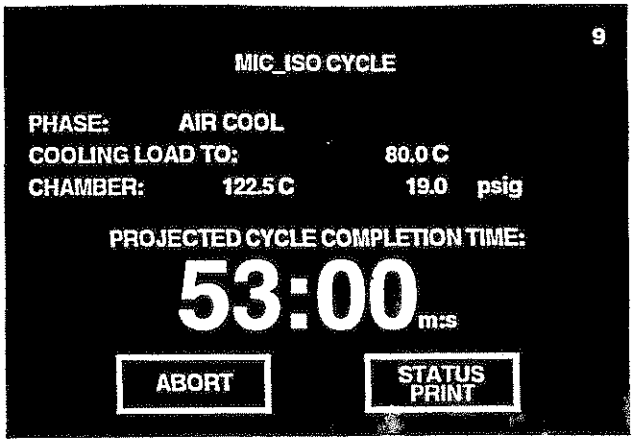
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Aircool** - Load in the chamber is cooled to the set FINAL LOAD TEMP value (default 80.0 C). The chamber pressure is controlled at the set AIR PRESSURE value (default 18.0 psig) by the use of compressed air.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

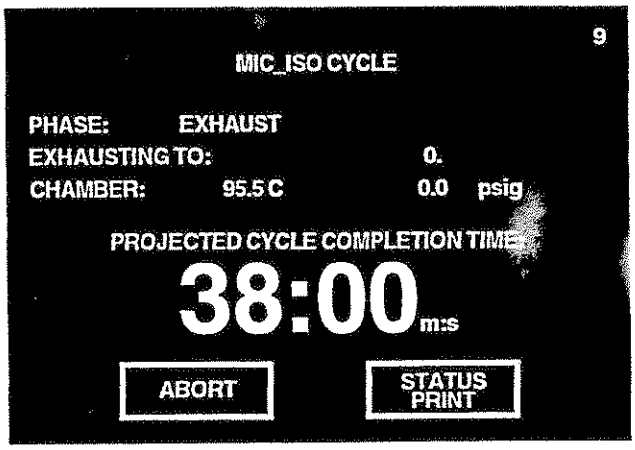
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Exhaust** - The chamber is exhausted to 0.5 psig.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

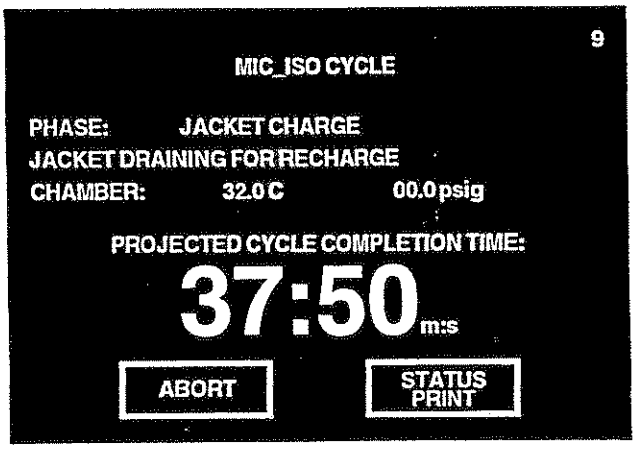
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Jacket Drain/Recharge** - Jacket is drained for JACKET DRAIN time (default 10 min.), then recharged to the PSTV JACKET TEMP (default 135° C /275° F)

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

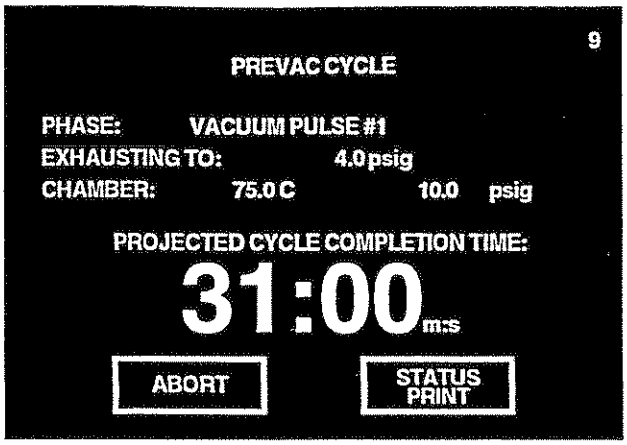


- **Post Vac Vacuum Pulse Exhaust** - Chamber is exhausted to 4 psig.

NOTE: The sterilizer can be programmed to pull up to 99 pulses during the Postvac portion of the cycle.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

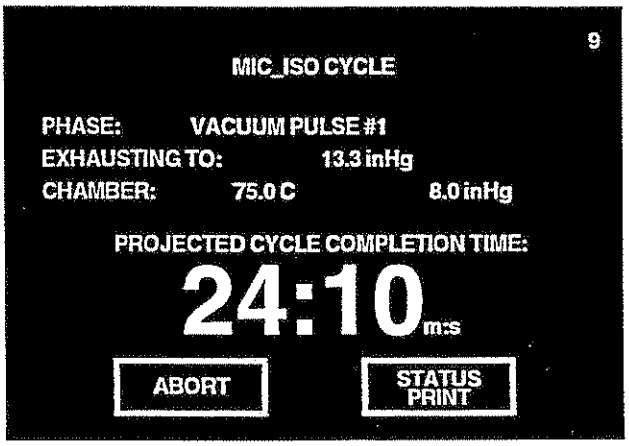
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Post Vacuum Pulse Evacuate** - A vacuum is drawn in the chamber to a level determined by the load temperature.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

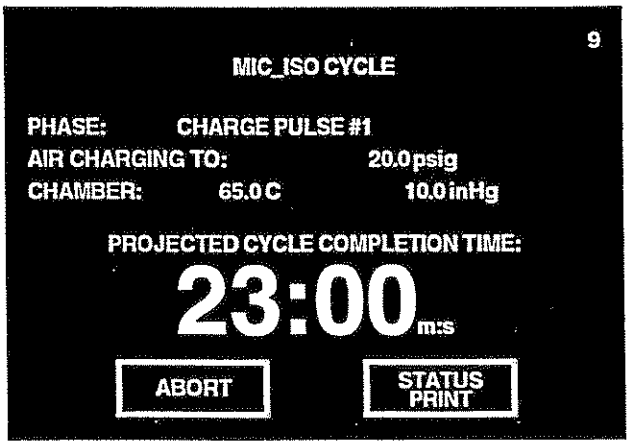
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Postvac Charge Pulse** - Chamber charges with air to the programmed PSTV maximum pressure parameter.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

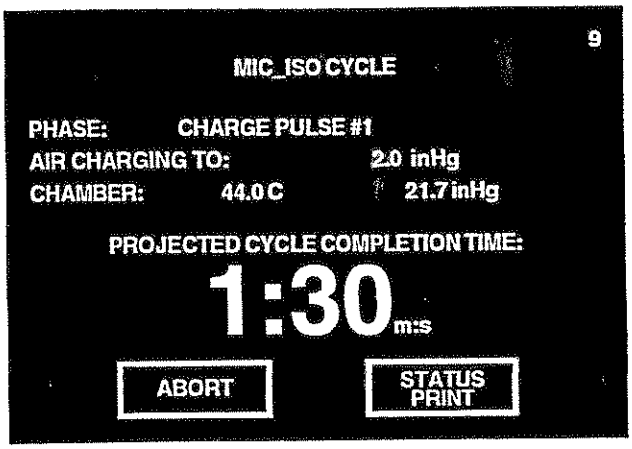
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Air Break** - After the last postvacuum pulse, filtered air enters the chamber to relieve the vacuum within the chamber.

Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

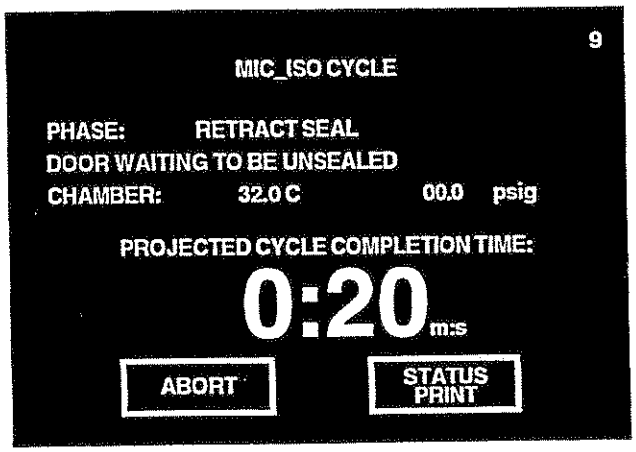
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Retract Seal** - Steam is exhausted from the door seal.

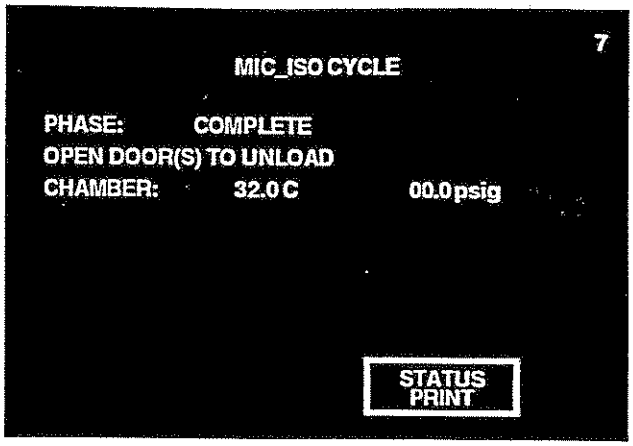
Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



NOTE: If sterilizer is equipped with double doors and interlock type 1 or 3 is programmed for this cycle, operator must select which door to unseal by pressing UNSEAL DOOR on the appropriate touch screen. Refer to Microisolator Change Values Procedure for description of interlock types.

- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed.



Pressing ABORT advances display to screen #11. Refer to "Aborting Cycle", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

⚠ WARNING - BURN HAZARD: When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - BURN HAZARD: When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, do not allow hot bottles to be jolted. Do not move bottles if any boiling or bubbling is present.

⚠ WARNING - FALL HAZARD: To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

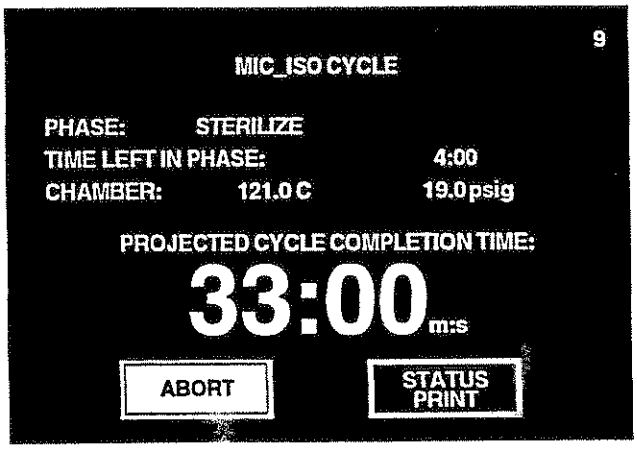
7. Once cycle is complete, open chamber door and unload sterilizer. Display returns to the main menu (screen #1).

Aborting Cycle

While running a Microisolator cycle, it may be necessary to end (abort) the cycle operation due to an incorrect cycle selection or a sterilizer malfunction. A cycle can be aborted any time during normal unit operation. If a cycle is aborted, the operator/supervisor must decide if the chamber load can be reprocessed.

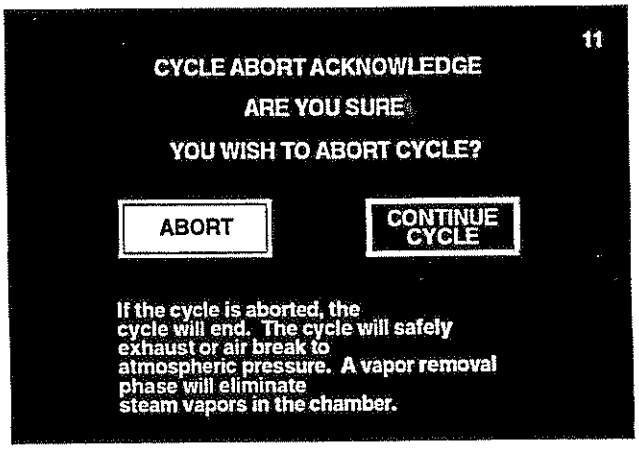
To abort a cycle in progress:

1. Press **ABORT** on the in-cycle status screen.



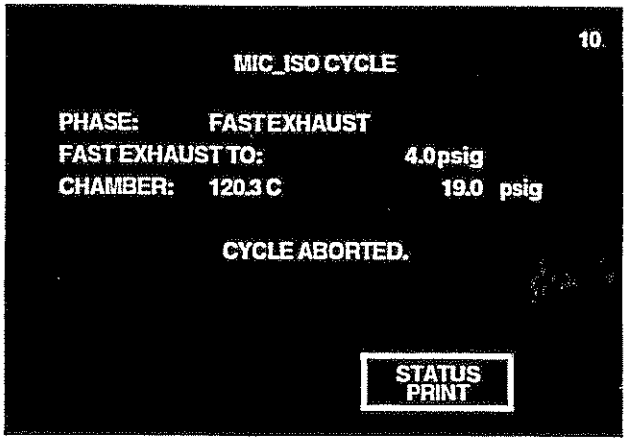
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

2. Screen #11 allows operator a final chance to continue with the current cycle in progress instead of aborting cycle operation.


11
CYCLE ABORT ACKNOWLEDGE
ARE YOU SURE
YOU WISH TO ABORT CYCLE?
ABORT
CONTINUE CYCLE
If the cycle is aborted, the cycle will end. The cycle will safely exhaust or air break to atmospheric pressure. A vapor removal phase will eliminate steam vapors in the chamber.

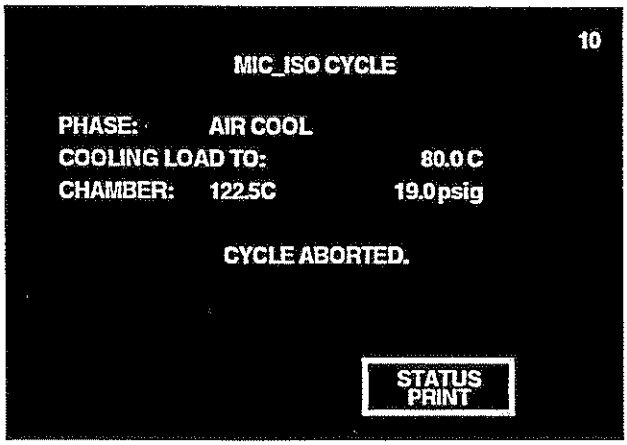
Pressing CONTINUE CYCLE resumes cycle operation at the point where it was interrupted. Display returns to the corresponding in-cycle status screen.

3. Press **ABORT** on screen #11. Printer records time the cycle was aborted.
   - If cycle is aborted while pressure is in the chamber, cycle automatically advances to the exhaust phase. Control system safely exhausts chamber and removes vapors before unsealing the chamber door.



Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

- If cycle is aborted in the charge or sterilize phase, cycle automatically advances to the aircool phase.



Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

⚠ WARNING - BURN HAZARD: When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - FALL HAZARD: To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

- If cycle is aborted in the air cool phase, the cycle automatically advances to the exhaust phase.

4. Once door is unsealed, display returns to the main menu (screen #1) and sterilizer may be unloaded.

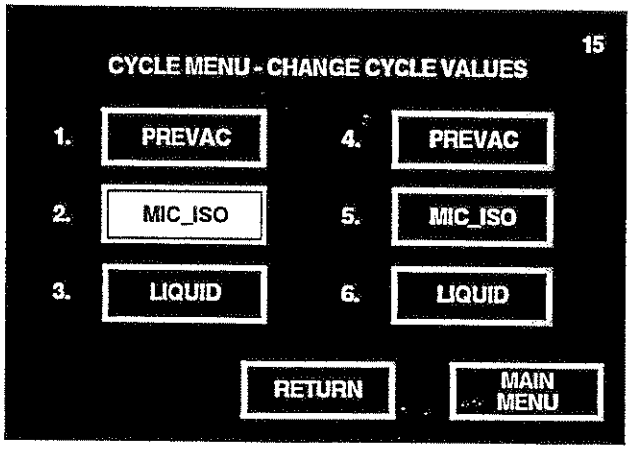
IMPORTANT: The operator/supervisor must decide if the chamber load must be reprocessed after the cycle was aborted.

CHANGE VALUES PROCEDURE

The Change Values procedure is used to change preset cycle values (parameters) for a particular cycle. The following procedure is an example of the Change Values procedure for a Microisolator cycle.

IMPORTANT NOTE: If preset cycle values are changed, it is necessary for the operator to verify the efficacy of the changed cycle.

1. Access Cycle Menu - Change Cycle Values (screen #15) as described at the beginning of this section.
2. Press **MIC_ISO** button.

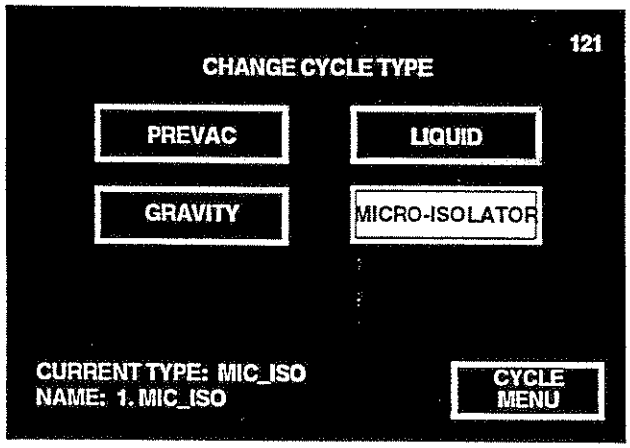


Pressing RETURN returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.

3. Screen #121 allows operator to choose the type of cycle that will be assigned to the selected cycle button. The current cycle name and assigned cycle type are shown at the bottom of the display.

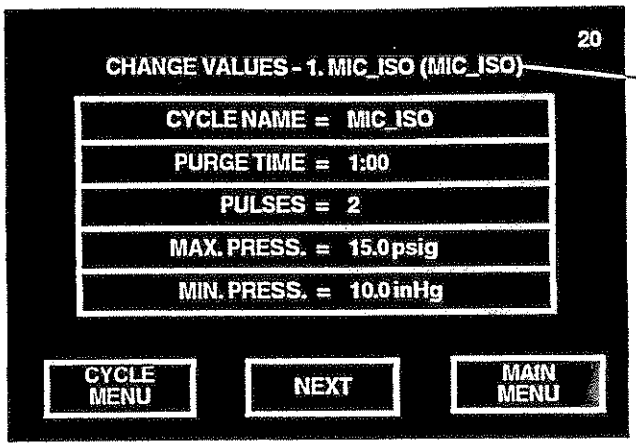
   Press **MICRO-ISOLATOR** to assign a MIC_ISO cycle type.



Pressing CYCLE MENU returns display to screen #15.

4. Screen #20 is the first of five menu screens which list the programmable values for the Microisolator cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.



Pressing CYCLE MENU returns display to screen #15.

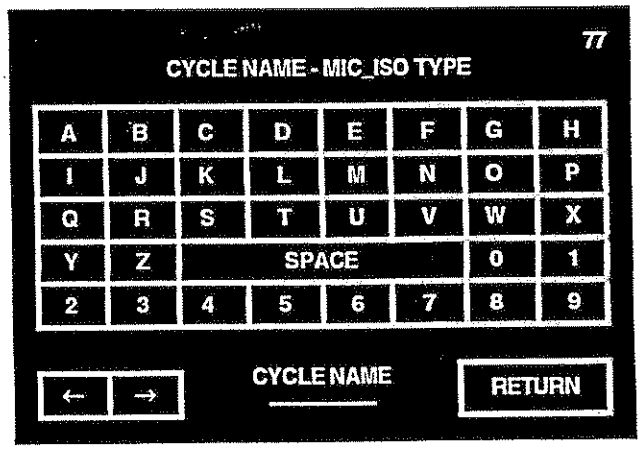
Pressing NEXT advances display to screen #21.

Pressing MAIN MENU returns display to screen #1.

- Pressing **CYCLE NAME** advances display to screen #77. This screen allows operator to enter a custom name for the selected cycle.

  Enter customized cycle name, maximum of 8 characters, using the alphanumeric keypad. Cycle name appears on display as it is being entered.

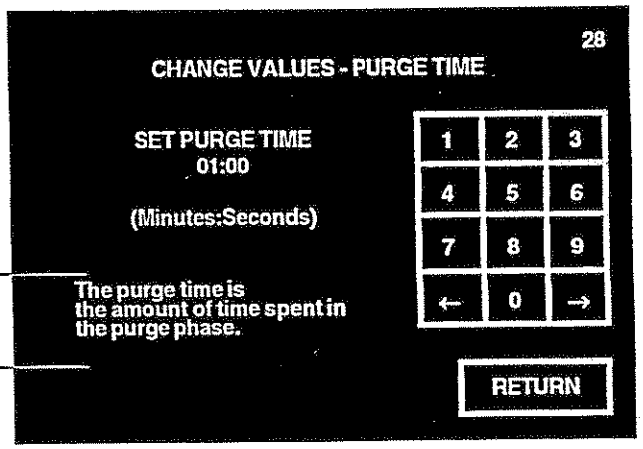
NOTE: Custom cycle name appears inside the corresponding touch screen button on screens #2 and #15, along top of corresponding in-cycle screens (#9) and on corresponding in-cycle printouts.



Pressing ← or → moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

- Pressing **PURGE TIME** advances display to screen #28. Enter purge time using the numeric keypad. Time appears on display as it is being entered.

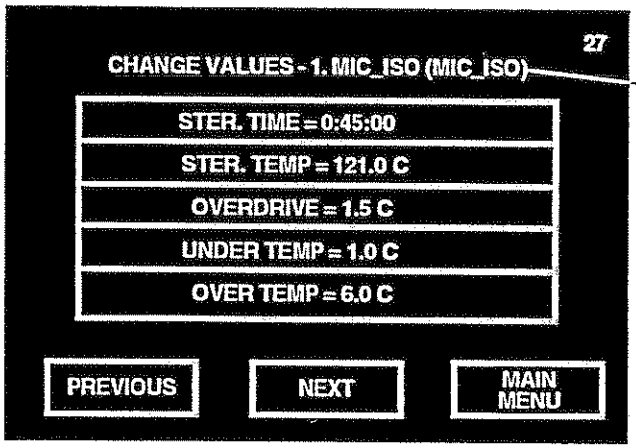


Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

5. Press **NEXT** button on screen #20. Screen #27 is the second of five menu screens which list the programmable values for the Microisolator cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

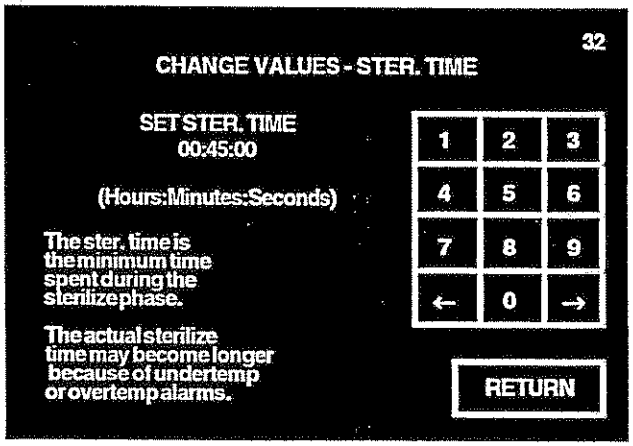


Pressing PREVIOUS returns display to screen #20.

Pressing NEXT advances display to screen #68.

Pressing MAIN MENU returns display to screen #1.

- Pressing **STER. TIME** advances display to screen #32. Enter sterilize time using the numeric keypad. Time appears on display as it is being entered.

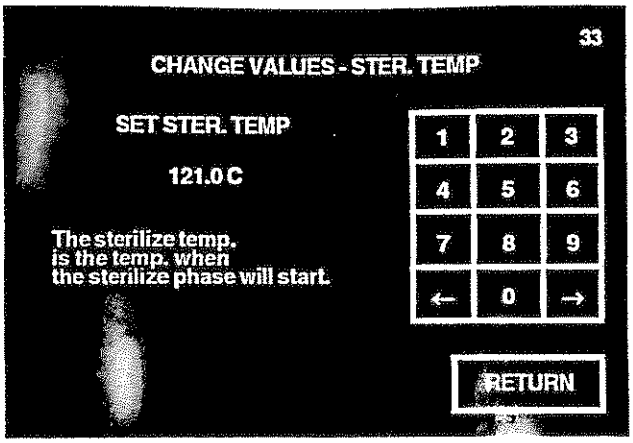


Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #27.

- Pressing **STER. TEMP** advances display to screen #33. Enter sterilize temperature using the numeric keypad. Allowable sterilize temperature range is 100°-125°C (212°-257°F) for Microisolator cycle. Temperature appears on display as it is being entered.

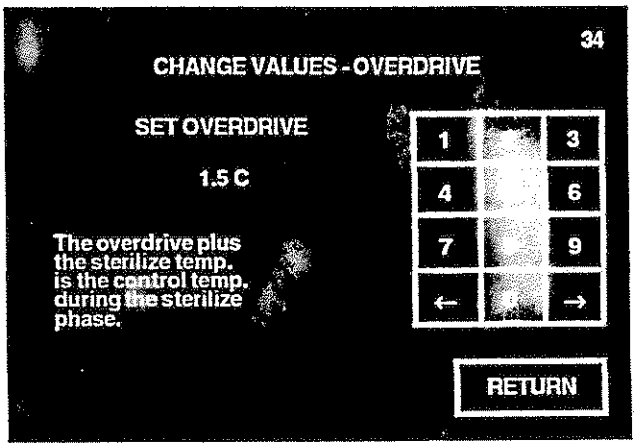
NOTE: If an out-of-range cycle value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range cycle value.



Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #27.

- Pressing **OVERDRIVE** advances display to screen #34. Enter overdrive temperature using the numeric keypad. Temperature appears on display as it is being entered.

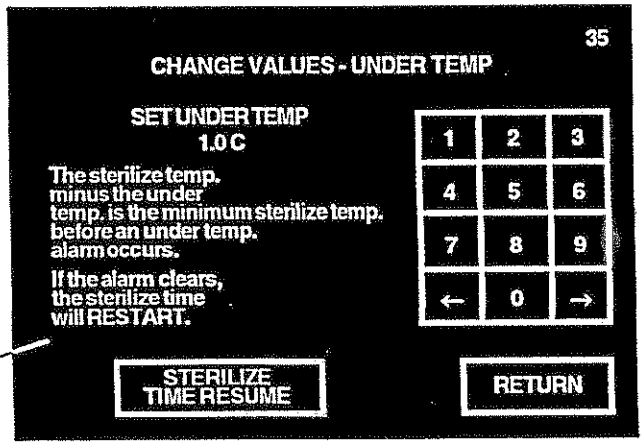


Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #27.

- Pressing **UNDER TEMP** advances display to screen #35. Enter under temperature value using the numeric keypad. Temperature appears on display as it is being entered.

  If an under temperature alarm occurs, cycle operation will hold until the sterilize temperature recovers. Once minimum temperature is reached, sterilize phase may be programmed to either restart or resume at the time when the alarm occurred. Current programmed setting is shown in the display screen, as indicated below.


35
CHANGE VALUES - UNDER TEMP
SET UNDER TEMP
1.0 C
The sterilize temp. minus the under temp. is the minimum sterilize temp. before an under temp. alarm occurs.
If the alarm clears, the sterilize time will RESTART.
1 2 3
4 5 6
7 8 9
← 0 →
STERILIZE TIME RESUME
RETURN

Current Programmed Setting

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

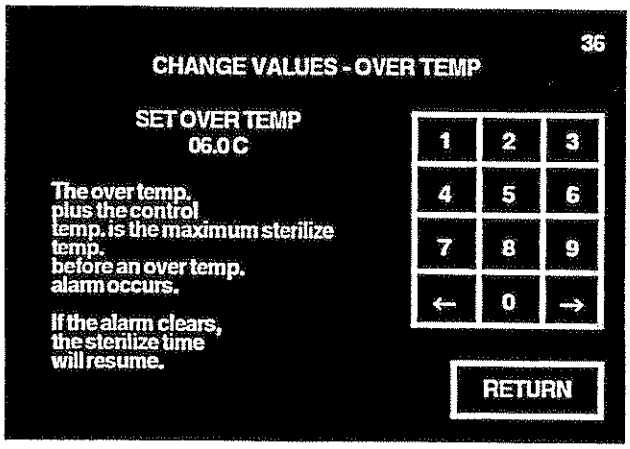
Pressing RETURN saves the changed cycle value and returns display to screen #27.

Pressing STERILIZE TIME RESUME will program control to resume the sterilize phase time once the alarm clears.

- Pressing **OVER TEMP** advances display to screen #36. Enter over temperature value using the numeric keypad. Temperature appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #27.



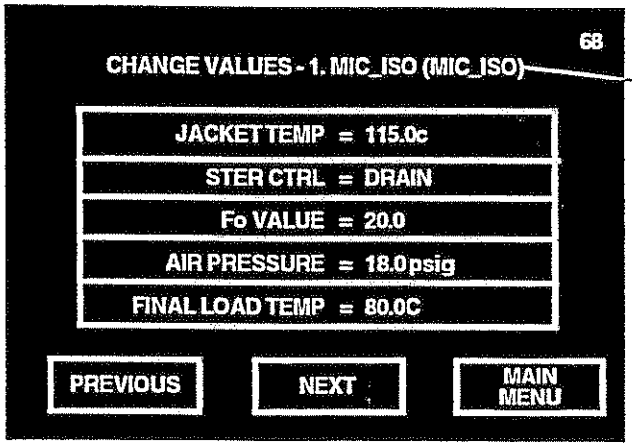
6. Press **NEXT** button on screen #27. Screen #68 is the third of five menu screens which list the programmable values for the Microisolator cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of jacket temp. , air pressure and final load temp is given on the corresponding display screen. The definition for ster ctrl and Fo value is given in the load probe section.

Pressing PREVIOUS returns display to screen #27.

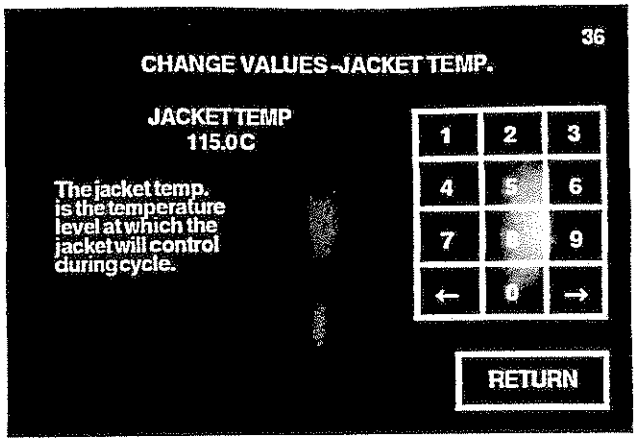
Pressing NEXT advances display to screen #113.

Pressing MAIN MENU returns display to screen #1.



- Pressing **JACKET TEMP** advances display to screen #64. Enter JACKET TEMP value using the numeric keypad. Allow jacket temperature range is 100° - 141° C (212° - 285° F) for all cycles. Temperature appears on the display as it is being entered.

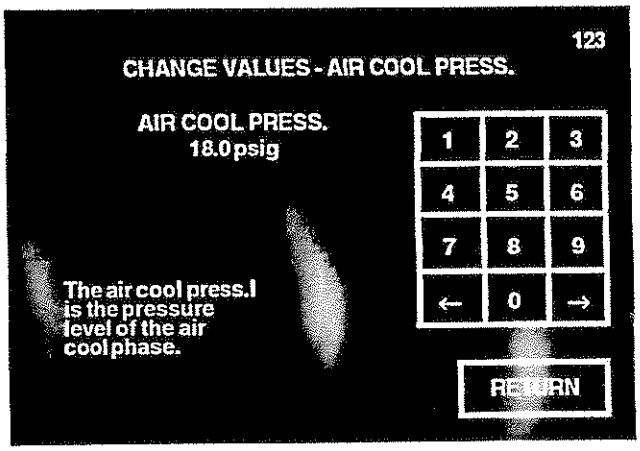
NOTE: If an out-of-range value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range value.



Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #68.

- Pressing **AIR PRESSURE** advances display to screen #123. Enter AIR COOL PRESSURE using the numeric keypad. Maximum air cool pressure is 45.0 psig. Air cool pressure appears on display as it is being entered.

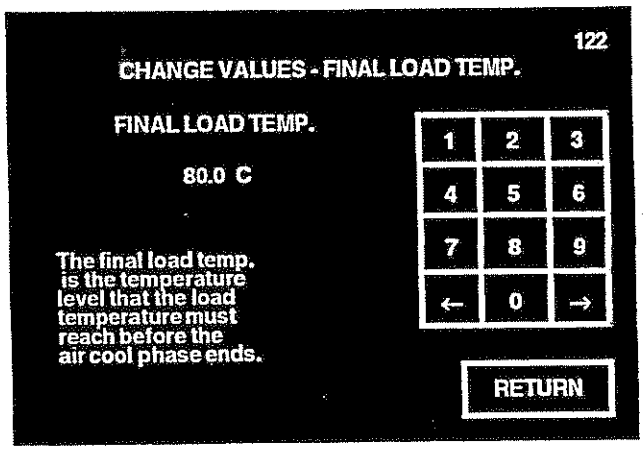


Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #68.

- Pressing **FINAL LOAD TEMP** advances display to screen #122. Enter final load temp value using the numeric keypad. Allowable Final Load Temp. value range is 50° - 100°C (122° - 212°F) for microisolator cycles. Value appears on the display as it is being entered.

NOTE: If an out-of-range value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range value.

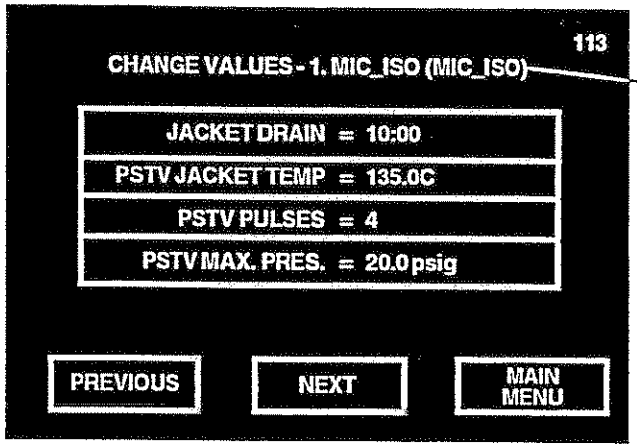


Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #67.

7. Press **NEXT** button on screen #68. Screen #113 is the fourth of five menu screens which list the programmable values for the Microisolator cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

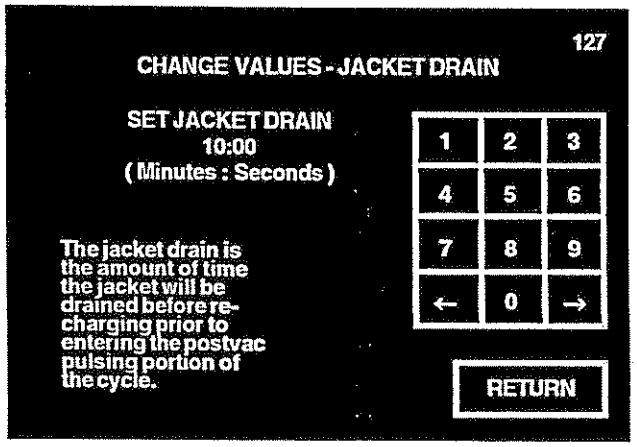


Pressing PREVIOUS returns display to screen #68.

Pressing NEXT advances display to screen #120.

Pressing MAIN MENU returns display to screen #1.

- Pressing **JACKET DRAIN** advances display to screen #127. Enter JACKET DRAIN time using the numeric keypad. Drain time appears on display as it is being entered.


127
CHANGE VALUES - JACKET DRAIN
SET JACKET DRAIN
10:00
(Minutes : Seconds)
The jacket drain is the amount of time the jacket will be drained before re-charging prior to entering the postvac pulsing portion of the cycle.
1 2 3
4 5 6
7 8 9
← 0 →
RETURN

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

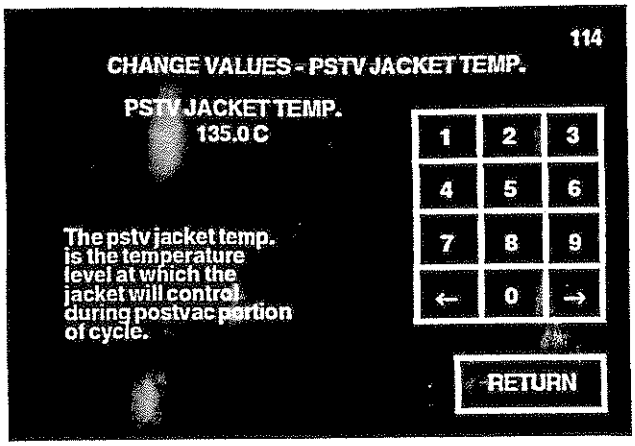
Pressing RETURN saves the changed cycle value and returns display to screen #113.

- Pressing **PSTV JACKET TEMP** advances display to screen #114. Enter PSTV JACKET TEMP using the numeric keypad. Allowable postvac jacket temperature range is 100° - 141° C (212° - 285° F) for all microisolator cycles. Temperature appears on the display as it is being entered.

NOTE: If an out-of-range value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range value.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

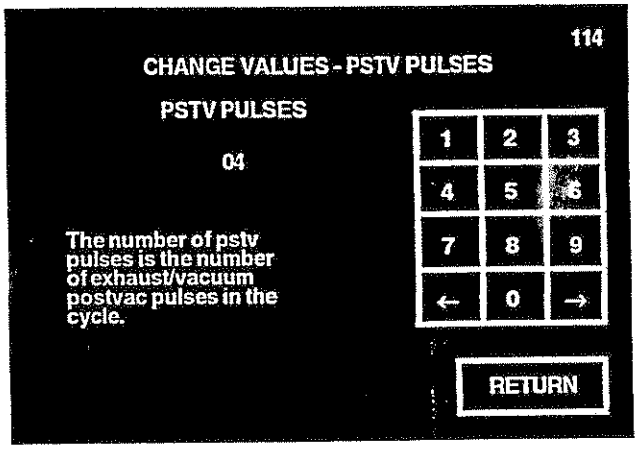
Pressing RETURN saves the changed cycle value and returns display to screen #113.


114
CHANGE VALUES - PSTV JACKET TEMP.
PSTV JACKET TEMP.
135.0 C
The pstv jacket temp. is the temperature level at which the jacket will control during postvac portion of cycle.
1 2 3
4 5 6
7 8 9
← 0 →
RETURN

- Pressing **PSTV PULSES** advances display to screen #115. Enter PSTV PULSES number using the numeric keypad. Value appears on the display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #113.

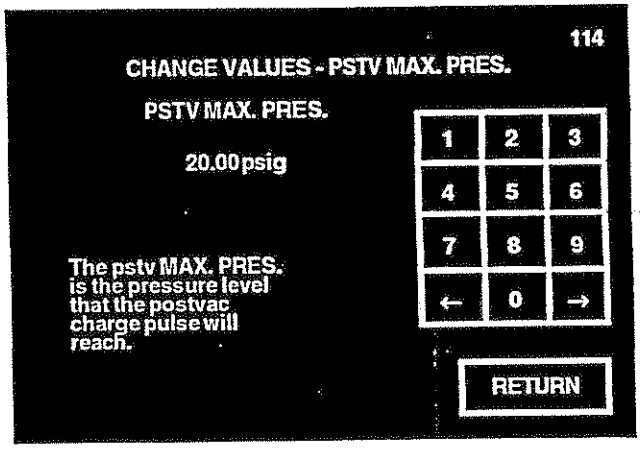


- Pressing **PSTV MAX. PRES.** advances display to screen #116. Enter PSTV MAX. PRES. using the numeric keypad. Allowable postvac maximum pressure range is 0 to 45 psig for all microisolator cycles. Value appears on the display as it is being entered.

NOTE: If an out-of-range value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range value.

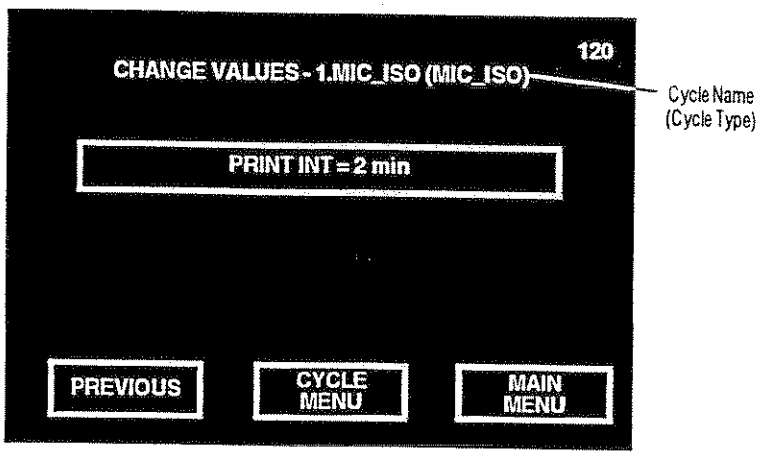
Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #113.


114
CHANGE VALUES - PSTV MAX. PRES.
PSTV MAX. PRES.
20.00 psig
The pstv MAX. PRES. is the pressure level that the postvac charge pulse will reach.
1 2 3
4 5 6
7 8 9
← 0 →
RETURN

8. Press **NEXT** button on screen #113. Screen #120 is the fifth of five menu screens which list the programmable values for the Microisolator cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

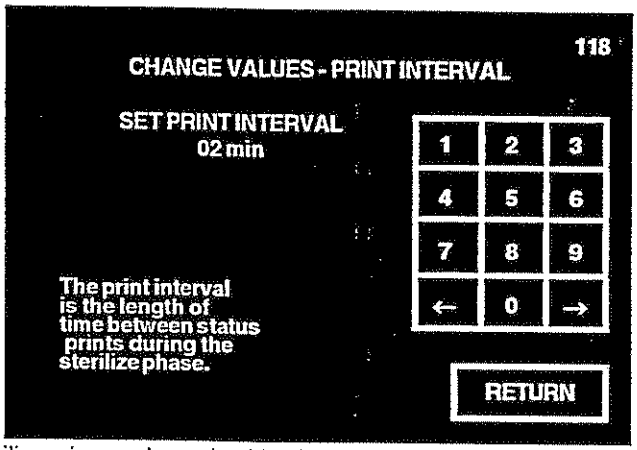


Pressing PREVIOUS returns display to screen #113.

Pressing CYCLE MENU returns display to screen #15.

Pressing MAIN MENU returns display to screen #1.

- Pressing **PRINT INT** advances display to screen #118. Enter print interval using the numeric keypad. Minimum print interval is 1 minute. Time appears on display as it is being entered.



Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

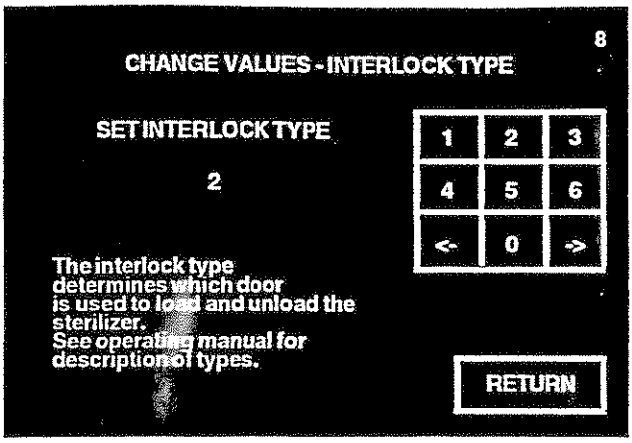
Pressing RETURN saves the changed cycle value and returns display to screen #120.

- If sterilizer is equipped with double doors, pressing **INTERLOCK** advances display to screen #8. Enter interlock type using the numeric keypad. Interlock type appears on the display as it is being entered.

NOTE: Default interlock type is #2. If different setting is desired, a separate interlock type must be set for each cycle.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

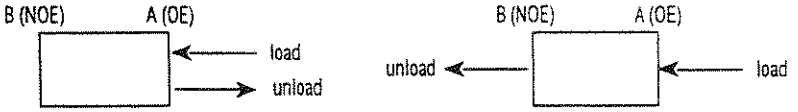
Pressing RETURN saves the changed cycle value and returns display to screen #120.



The following descriptions and illustrations explain each interlock type, #0 through #6. Each door on the illustrations is labeled "A" or "B", for reference. Door A is located on the same end as the main power disconnect switch. Door B is located on the opposite end.

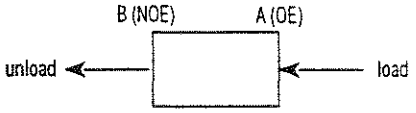
#0 = No interlocks. Either door can be used to load and unload the sterilizer. Both doors can be open at the same time. At end of cycle, both doors are automatically unsealed.

#1 = Door A is designated as the operating end (OE). Sterilizer must be loaded from door A, and can be unloaded from door A or door B. At end of cycle, operator must manually unseal the unload door by pressing the UNSEAL DOOR touch screen button (screen #65) located on the same end as the door.



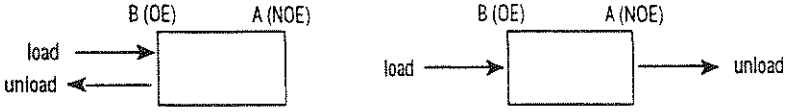
NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

#2 = Door A is designated as the operating end (OE). Sterilizer must be loaded from door A and unloaded from door B. At end of cycle, door B is automatically unsealed.



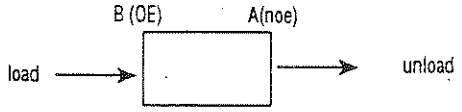
NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

#3 = Door B is designated as the operating end (OE). Sterilizer must be loaded from door B, and can be unloaded from door A or door B. At end of cycle, operator must manually unseal the unload door by pressing UNSEAL DOOR touch screen button (screen #65) located on the same end as the door.



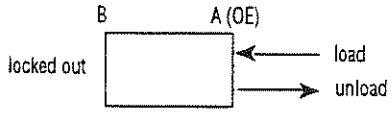
NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

#4 = Door B is designated as the operating end (OE). Sterilizer must be loaded from door B and unloaded from door A. At end of cycle, door A is automatically unsealed.

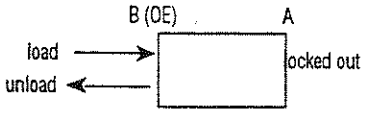


NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

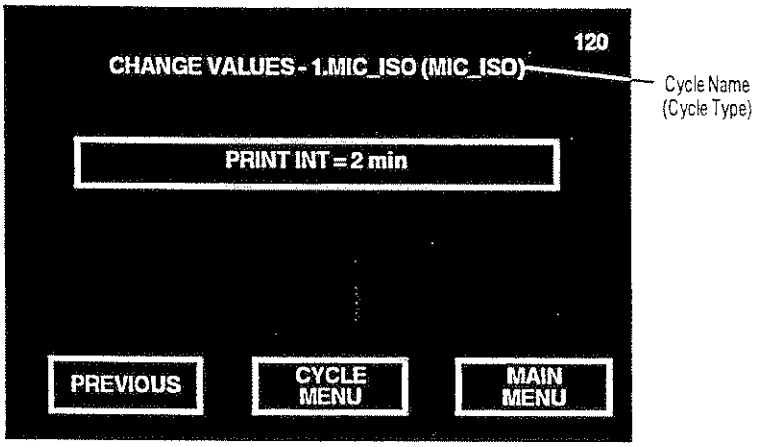
#5 = Door A is designated as the operating end (OE) door. Sterilizer must be loaded and unloaded from door A; door B is locked out. At end of cycle, door A is automatically unsealed.



#6 = Door B is designated as the operating end (OE) door. Sterilizer must be loaded and unloaded from door B; door A is locked out. At end of cycle, door B is automatically unsealed.



9. After all cycle value changes have been made, press **CYCLE MENU** button on screen #22. Display returns to screen #15.



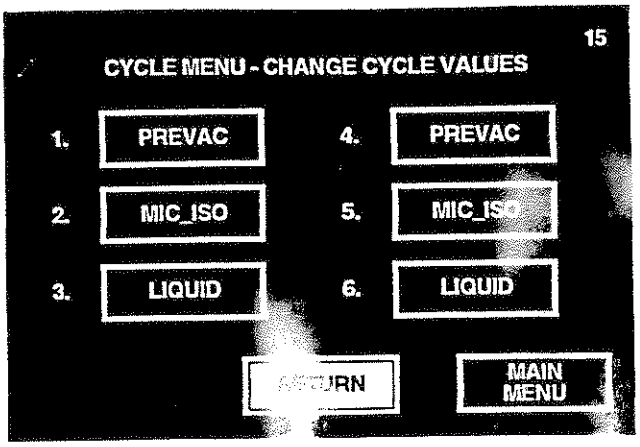
Pressing PREVIOUS returns display to screen #68.

Pressing CYCLE MENU returns display to screen #15.

Pressing MAIN MENU returns display to screen #1.

10. From screen #15, remaining cycles can be modified if necessary. The procedures for changing other cycle values are similar to the Change Values procedure just outlined.

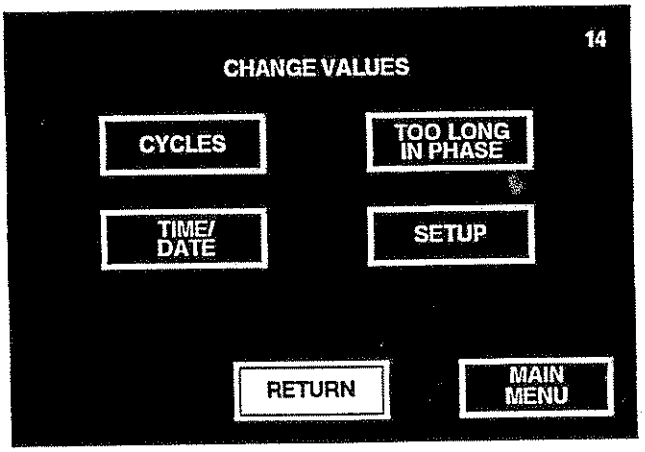
    Once all changes to the cycles and cycle values are completed, press **RETURN**. Display returns to screen #14.



Pressing MAIN MENU returns display to screen #1.

11. From screen #14, the sterilizer operating parameters (i.e., Too Long In Phase, Time/Date and Setup) can be changed. Refer to Section 8, Programming Operating Parameters, for details

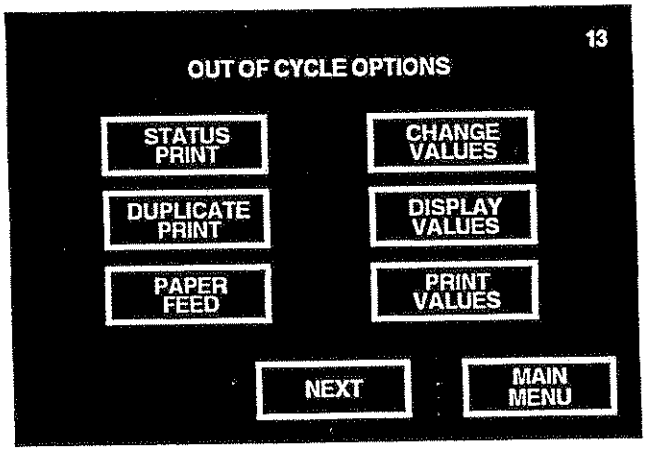
    After all changes are completed, press **RETURN** button. Control exits the Change Values option, saving all changes made, and display returns to screen #13.



Pressing MAIN MENU returns display to screen #1.

12. Refer to Section 9, Out of Cycle Options, for information on the other options listed on screen #13.

    Press MAIN MENU to return display to main menu (screen #1).



Operating Procedure

DECONTAMINATION CYCLE

W/ DECONTAMINATION DRAIN RTD

Eagle 3000 Series Sterilizers

(3-4-97) P-387346-577 Rev. 0

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A WORD FROM AMSCO

This manual contains important information on proper use of this sterilizer. All operators and department heads are urged to carefully review and become familiar with the warnings, cautions and instructions contained herein. This sterilizer is specifically designed to process goods using only the cycles as specified in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for the recommended sterilization technique.

Service Information

A thorough preventive maintenance program is essential to safe and proper operation of this sterilizer. You are encouraged to contact STERIS® concerning our Preventive Maintenance Agreement. Under terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. STERIS® maintains a nationwide staff of well-equipped, factory trained technicians to provide this service, as well as expert repair services. Contact your STERIS® representative for details.

STERIS® carries a complete line of accessories for this unit to simplify, organize and assure sterility of the sterilization process. Instrument trays, Vantage and DEXTEX wraps and biological/chemical monitoring systems are all available to fulfill your facility's processing needs. An STERIS® representative will gladly review these with you.

Advisory

A summary of the safety precautions to be observed when operating this equipment can be found in Section 1 of this manual and behind the upper access panel of the unit. Do not operate the sterilizer until you have become familiar with this information.

This sterilizer is not designed to process flammable liquids nor liquids in containers that are not designed for sterilization. Any alteration of the sterilizer which affects its operation will void the warranty and could violate state and local regulations and jeopardize insurance coverage.

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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Warnings and Cautions in the Operating Procedure that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

DECONTAMINATION CYCLE

⚠ WARNING - BURN HAZARD: Sterilizer and rack/shelves will be HOT after cycle is run. Always wear protective gloves and apron (also face shield if processing liquids) when loading or unloading the sterilizer.

⚠ WARNING - SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spillage or condensation in sterilizer loading or unloading area(s).

The sterilizer is equipped to run decontamination (DECONT) cycles. Although the control does not have a DECONT cycle as any one of the displayed default cycles, any of the displayed cycles can be changed to DECONT cycles. Refer to the Service and Maintenance Procedure for information about changing cycle skeletons and values, and descriptions of settable cycle parameters.

The Decontamination cycle uses an additional RTD and filter in the specialized drainline that is used exclusively for decontamination cycles. Periodically, the filter must be replaced. The RTD (shown as "DT" on the control display) is used to maintain the chamber at the selected control temperature during sterilization just as the chamber drain RTD is used in a standard cycle.

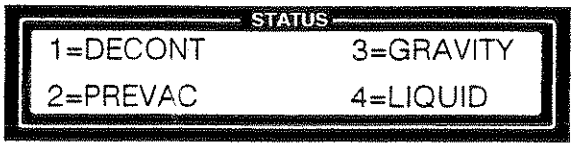
Automatic Operation: Decontamination Cycle

⚠ WARNING - BURN HAZARD: Sterilizer and rack/shelves will be HOT after cycle is run. Always wear protective gloves and apron (also face shield if processing liquids) when loading or unloading the sterilizer.

WARNING - SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spillage or condensation in sterilizer loading or unloading area(s).

Refer to Before Operating the Sterilizer section in the core sterilizer operating procedure, to prepare the unit for running this cycle.

1. Press and release the corresponding Cycle Selector touch pad (1, 2, 3 or 4) for Decont cycle. Press and release the touch pad a second time within five seconds to begin cycle.



NOTE: A complete cycle printout of all values can be obtained any time during cycle by pressing PRINT VALUES on the printer function switch. To obtain a cycle printout out of cycle, press the corresponding Cycle Selector touch pad (1, 2, 3 or 4) and press PRINT VALUES within five seconds.

```
= = = = = = = = = = = = = =
= = = =  DECONT   = = = = =
= = = = = = = = = = = = = =
CYCLE START AT  TIME
             ON  DATE

CYCLE COUNT      00000
OPERATOR         -----
STERILIZER       VAC
SKELETON         DECONT
CYCLE NO.        1

STER TEMP    =   132.0 C
CONTROL TEMP =   133.5 C
STER TIME    =   0:30:00
DRY TIME     =   0:15:00

PURGE
------------------------
TIME OF DAY    TIME
CHAMBER PRESS  PRESS P
DECONT TEMP    TEMP  C

PULSE VACUUM NUMBER
VACUUM HOLD*
PULSE CHARGE NUMBER
PRESSURE HOLD**
CHARGE
STERILIZE
FAST EXHAUST
VACUUM DRY
DRY
AIR BREAK
COMPLETE
```

2. The cycle name and cycle values are printed at the beginning of the cycle.

a. Cycle Skeleton: DECONT.
b. Cycle Number: 1, 2, 3 or 4. (1a, 2a, 3a, ...)

← sterilize temperature
← sterilize temperature plus overdrive
← sterilize time
← dry time

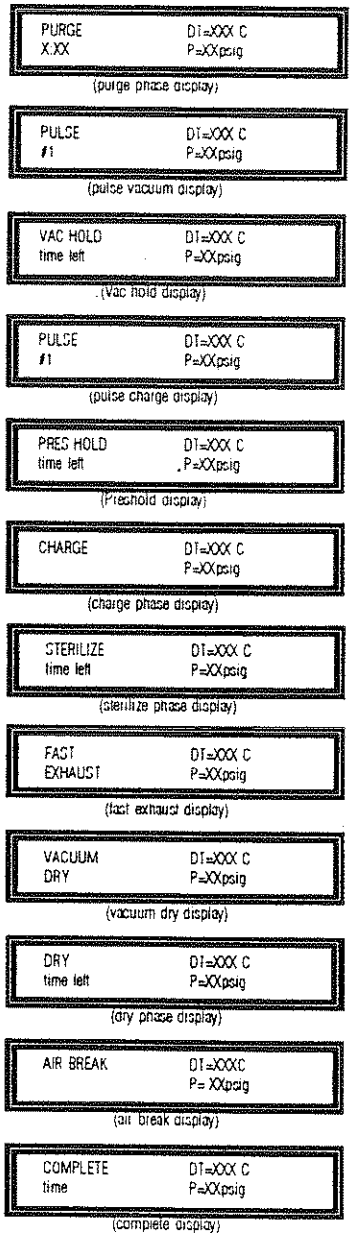
← c. Phase name and the current time, pressure and temperature are printed.

← d. The phase names on the left show the sequence of the cycle. Refer to the following explanation for a complete description of each phase.

**Only present if available, and if V1 HOLD is greater than 0.*

***Only present if available, and if P1 HOLD is greater than 0.*

DISPLAY WINDOW MESSAGE SEQUENCE FOR DECONT CYCLES



3. Steam flows through chamber for selected time interval.

4. After the purge phase, a vacuum is pulled in the chamber for one minute and then down to the V1 vacuum parameter. **For units with a vacuum pump, there is no one minute wait.**

5. If the VAC (V1) HOLD parameter is greater than 0, the cycle holds at the current vacuum level for that amount of time.

6. The pulse charges to the P1 pressure parameter.

7. If the PRES (P1) HOLD parameter is greater than 0, the cycle holds at the P1 pressure point for that amount of time.

8. After the last prevacuum pulse, the chamber charges with steam.

9. During the charge phase, the cycle will charge with steam to the sterilize temperature.

10. The sterilize phase begins when the decontamination drain RTD is greater than the sterilize temperature. The decontamination chamber steam valve is controlled to maintain this temperature at the set control temperature.

11. When the sterilize time is expired, the fast exhaust phase begins. The pressure in the chamber decreases to 3 psig (0.2 bar).

12. When the pressure is equal to or less than 3 psig (0.2 bar), the vacuum dry phase begins. A vacuum is pulled in the chamber to the dry vacuum point.

13. After the dry vacuum point is reached, the cycle enters the dry phase. Evacuation of the chamber continues for the selected time interval.

14. When dry phase is complete, the cycle enters the air break phase. Filtered air enters the chamber to relieve the vacuum in the chamber.

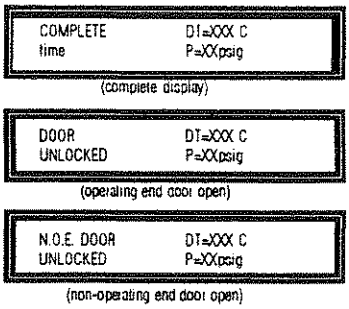
15. Ten seconds after the vacuum level reaches 2 inHg (0.068 bar), the cycle is complete.

```
LOAD                AABBCC

DECONT TEMP MAX=XXX.X C
DECONT TEMP MIN=XXX.X C

CONDITION         = X:XX
STERILIZE         = X:XX
EXHAUST           = X:XX
TOTAL CYCLE  =    X:XX

= = = = = = = = = = = =
= = READY TO UNLOAD = =
= = = = = = = = = = = =
```

←AA = Month; BB = Day; CC = Number of cycles run that day

The complete tone sounds, if selected, and the cycle summary and end-of-cycle messages are printed.

←see warning labels



16. Once the cycle is complete, unlock and open chamber door. The control will automatically reset to current cycle values.

17. After the doors are unlocked and the appropriate safety precautions have been taken, remove the load from the chamber.

OPERATING PROCEDURE

Load Probe - Fo and Load Drain

AMSCO Scientific
Eagle® Century Series
Sterilizer

(10-21-94) P-387344-306 Rev. 1

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Printed in U.S.A.

A WORD FROM AMSCO

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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Warnings and Cautions in the Operating Procedure that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

LOAD PROBE - FO AND LOAD/DRAIN

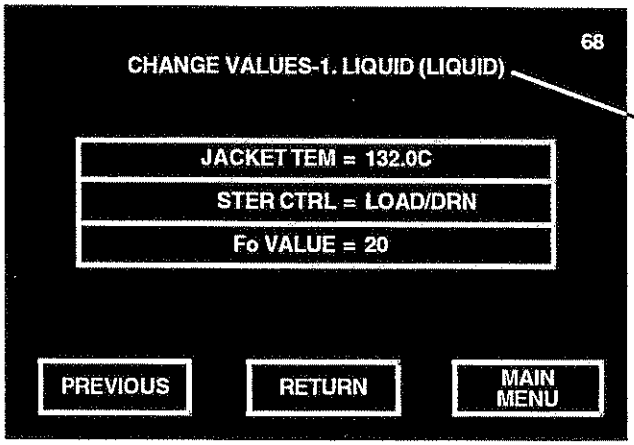
The sterilizer is equipped with a load temperature probe (RTD) located in the chamber. This load probe can be inserted into products to determine the actual temperature of those products during the sterilization cycle. There are a number of different options and settings that can be utilized with a load probe.

Load/Drain Option

The Load/Drain option feature allows the cycle to be controlled by the load probe and Fo. The sterilize phase will begin when the drain temperature and the load temperature are equal to or above the set sterilize temperature.

The sterilizer is factory set with all cycles having the drain option. Obtain a values printout of all cycles by pressing the print values button on screen #13, then all values on screen # 91. Select the cycles that you want to have the load drain option and make a note of the cycle number. Press the CHANGE VALUES button on screen #13 and proceed to modify the desired cycle. Advance to the following screen:

Note: Examples shown are screens from a liquid cycle.



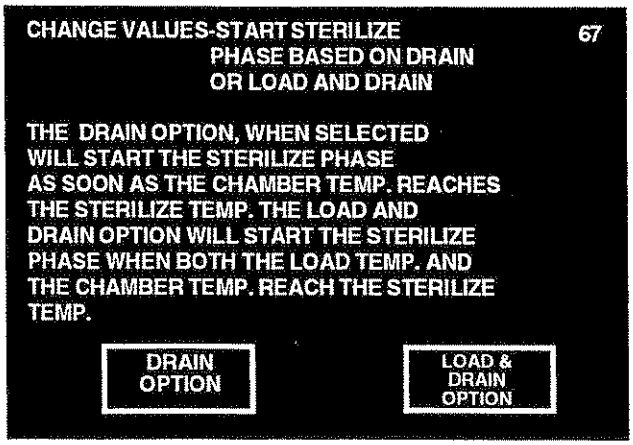
Pressing PREVIOUS returns display to screen #27.

Pressing RETURN saves all changed parameters and returns display to screen #120.

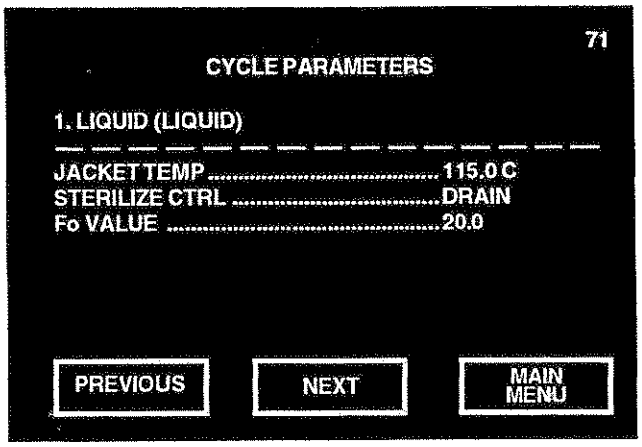
Prevac and Gravity cycles show NEXT instead of RETURN. Pressing NEXT will show the last page of cycle parameters that may be changed.

Pressing MAIN MENU returns display to screen #1.

Press button STER CTRL = and the display will show:


CHANGE VALUES-START STERILIZE PHASE BASED ON DRAIN OR LOAD AND DRAIN
67
THE DRAIN OPTION, WHEN SELECTED WILL START THE STERILIZE PHASE AS SOON AS THE CHAMBER TEMP. REACHES THE STERILIZE TEMP. THE LOAD AND DRAIN OPTION WILL START THE STERILIZE PHASE WHEN BOTH THE LOAD TEMP. AND THE CHAMBER TEMP. REACH THE STERILIZE TEMP.
DRAIN OPTION
LOAD & DRAIN OPTION

The following screen will be shown when DISPLAY VALUES is selected and the values are shown for a cycle.



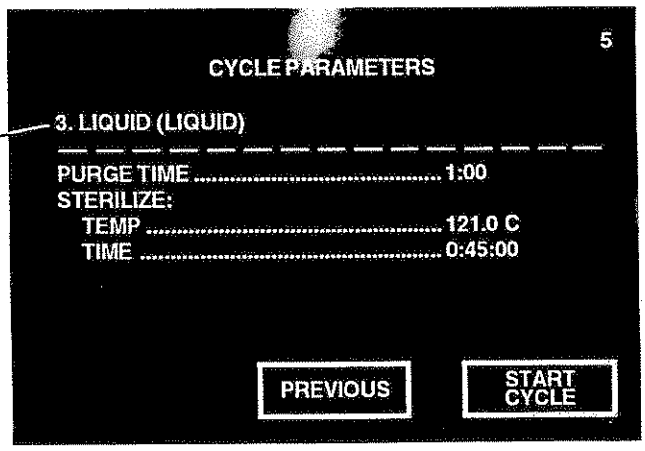
Pressing PREVIOUS returns display to screen #96.

Pressing NEXT advances display to screen #101.

Pressing MAIN MENU returns display to screen #1.

Displays and Printouts

When a cycle is selected with the Load/Drain option selected the display will show a screen similar to the following:



Cycle Name (Cycle Type)

Pressing PREVIOUS returns display to screen #2.

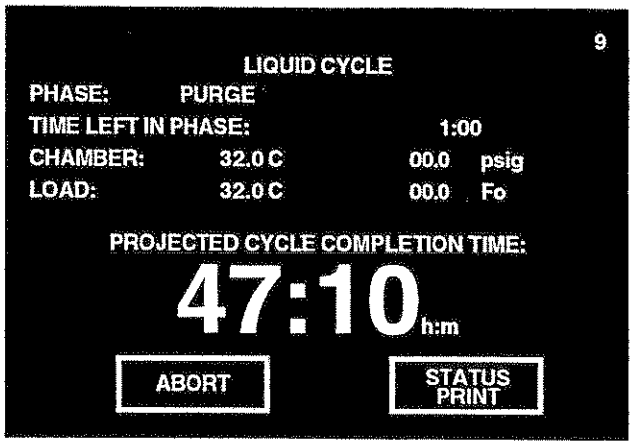
The in cycle status Full printout will include the load temperature as follows:

```
C time   temp   press
  LT1    temp   FO value
```

The in cycle status EXTENDED printout will include the load temperature as follows:

```
STATUS
- - - - - - - - - - - -
TIME OF DAY     time
CHAMBER PRES    pres psig
CHAMBER TEMP    temp C
LOAD TEMP       temp C
FO VALUE        value <-- Fo VALUE ACCUMULATED DURING CYCLE.
```

The in cycle display will show the load temp and Fo value.



Pressing ABORT advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

At the end of each cycle, the following printout will be printed before the phase times:

```
LOAD TEMP MAX=XXX.X C
LOAD TEMP MIN=XXX.X C
```

The Fo summary printout will be one of the following:

a. If the Fo value is less than the Fo set point, then the following summary will occur:

```
FO SUMMARY
--------------------
FO VALUE  03.3
FO VALUE did not
reach FO set point [10]
```

(values are examples only)

b. If the Fo value is equal to or greater than the Fo set point then the following summary will occur:

```
FO SUMMARY
-------------------------
FO VALUE  20.0
FO VALUE reached
FO set point [20]
```

(values are examples only)

The load probe option is equipped with an alarm to detect if the probe is operating correctly. An alarm will occur if the load temperature probe is reading -18.9° C or (2° F), or it is reading above 145° C(294° F). If an alarm occurs, the buzzer will sound and the following will be printed:

```
* ALARM
FAILURE READING LOAD T
---------------------------
status...
```

See Operator Troubleshooting in the Operating Procedure.

Fo Sterilization

NOTE: Only enabled with the Load/ Drain option selected.

The Fo is the measure of the equivalent amount of time at which a specific load would have been exposed at the base sterilization temperature of 121.1 C or 250.0 F. Units of Fo are minutes. The sterilizer control is programmed to calculate Fo once all load probes have reached 110.0 C or 230.0 F, although significant Fo accumulation will not occur until all load probes are above 121.1 C or 250.0 F, where Fo will accumulate faster than real (clock) time.

The calculations done by the control are done on a base temperature of 121.1 C or 250.0 F. The formula used is:

Fo = summation of 10 raised to the power of (T1-T2) divided by Z and multiplied by the change in t.

where T1 = the temperature of the coldest load temperature.

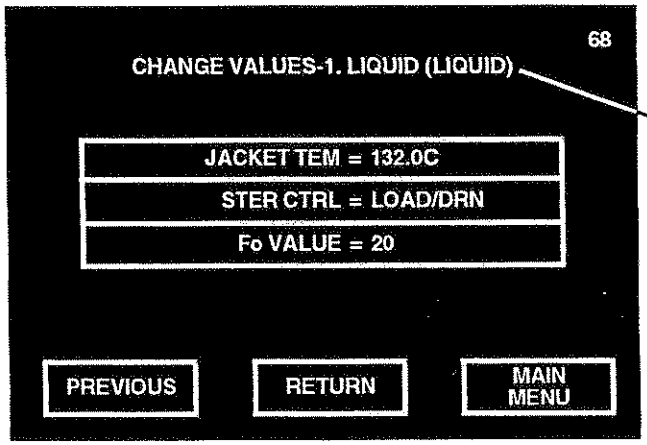
T2 = 121.1 C or 250.0 F

Z = 10.0 C or 18.0 F

t = 1 second (the time duration between Fo accumulations)

The cycles have the option of ending the charge or sterilize phase when the Fo value is equal to or greater than the Fo set point. If the above condition occurs, the cycle will immediately exit to the exhaust phase.

In order to change the Fo values, press CHANGE VALUES on screen #13. Advance to screen #68.

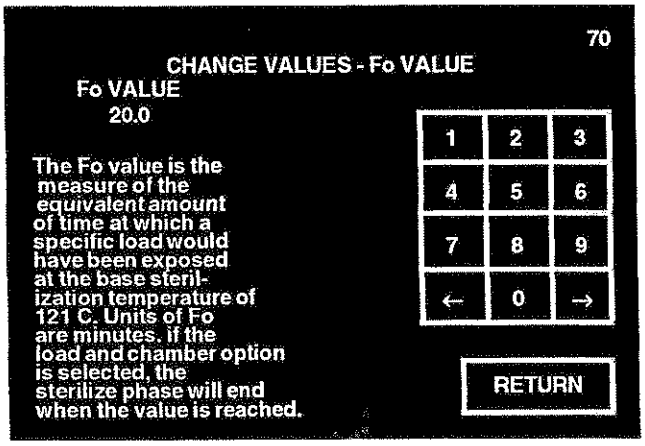


Pressing PREVIOUS returns display to screen #27.

Pressing RETURN saves all changed parameters and returns display to screen #120.

Pressing MAIN MENU returns display to screen #1.

Press Fo VALUE = on screen #68. The display will show:


70
CHANGE VALUES - Fo VALUE
Fo VALUE
20.0
The Fo value is the measure of the equivalent amount of time at which a specific load would have been exposed at the base sterilization temperature of 121 C. Units of Fo are minutes. If the load and chamber option is selected, the sterilize phase will end when the value is reached.
1
2
3
4
5
6
7
8
9
←
0
→
RETURN

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

An Fo value of 0.0 to 999.0 may be entered for each cycle selected with the load/drain option.

OPERATING PROCEDURE

Reference Probe

AMSCO Scientific
Eagle® Century Series
Sterilizer

(1-12-94) P-387344-311 Rev. 0

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Printed in U.S.A.

A WORD FROM AMSCO

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SUMMARY OF WARNINGS AND CAUTIONS

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Displays and Printouts

The sterilizer is equipped with a reference temperature probe (RTD) located in the chamber drain. Additional displays, printouts and alarms will exist with the reference probe.

The extended status printout will include the reference temperature as follows:

```
status...
--------------------
TIME OF DAY        time
CHAMBER PRES       pres
CHAMBER  TEMP      temp
REFER    TEMP      temp   <--ADDITIONAL PRINTOUT
```

DRAIN/REFERENCE Deviation Alarm

During a cycle, a comparison will constantly be made between the chamber and the reference probe. If the difference is greater than 1° C (2 F) an alarm will occur. If an alarm occurs, the buzzer will sound and the following will be printed:

```
*ALARM
DRAIN/REFER DEVIATION
---------------------
status...
```

The cycle will continue normally. If the difference becomes less than 0.5° C (1° F) during the cycle, the following will be printed:

```
*CLEAR          time
DRAIN/REFER DEVIATION
---------------------
```

See Operator Troubleshooting in the Operating Procedure for further information.

OPERATING PROCEDURE
JACKET TEMPERATURE PROBE

AMSCO Scientific
Eagle® Century Series
Sterilizer

(6-22-00) P-387344-346 Rev. 1

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SUMMARY OF WARNINGS AND CAUTIONS

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JACKET TEMPERATURE PROBE

Displays and Printouts

The sterilizer is equipped with a Jacket temperature probe (RTD) located in the jacket drain. Additional displays, printouts and alarms will exist with the jacket probe.

The extended status printout will include the Jacket temperature as follows:

```
status...
---------------------
TIME OF DAY        time
CHAMBER PRES       pres
CHAMBER  TEMP      temp
JACKET   TEMP      temp   <--ADDITIONAL PRINTOUT
.                         <--INDICATES ADDITIONAL
.                            RTD'S MAY EXIST
.
```

NOTE: No jacket temperature reading will be printed if the full status printout is selected.

Jacket Temperature Control

The JACKET TEMPERATURE CONTROL allows the sterilizer to be run at temperatures from 100° C to 138° C without any manual adjustments of the jacket pressure.

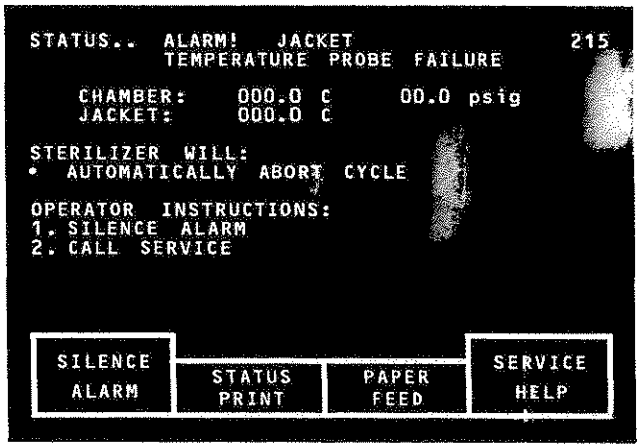
During a cycle, the jacket steam valve (S9) will control to maintain the sterilize temperature plus overdrive in the jacket drain by reading the jacket temperature probe. The chamber steam valve (S2) will remain full open whenever the chamber requires steam. The S9 valve will perform the necessary temperature control.

Out of cycle, the jacket will control at approximately 112° C ±.5° C.

Jacket Temperature Probe ALARM

Occurs if jacket temperature reading is outside the normal range. This alarm will occur in cycle or out of cycle.

Screen with Operator Instructions



Screen with Service Instructions

OPERATING PROCEDURE

HIGH WATER DUMP

AMSCO Scientific Eagle® Century Series Sterilizer

(5-12-95) P-387344-302 Rev.1

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Printed in U.S.A.

A WORD FROM AMSCO

This manual contains important information on proper use of the Scientific Eagle Century Series Sterilizer. All personnel involved in the use of this equipment must carefully review and comply with the warnings, cautions and instructions contained in this manual. These instructions are important to protect the health and safety of personnel operating an Eagle Century Series sterilizer and should be retained in a conveniently accessible area for quick reference.

This sterilizer is specifically designed to process goods using only the cycles as specified in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for the recommended sterilization technique.

AMSCO carries a complete line of accessories for use with this sterilizer to simplify, organize and assure sterility of the sterilization process. Instrument trays, Vantage and DEXTEX wraps and biological/chemical monitoring systems are all available to fulfill your facility's processing needs. An AMSCO representative will gladly review these with you.

Service Information

A thorough preventive maintenance program is essential to safe and proper sterilizer operation. Comprehensive instructions for preventive maintenance can be found in the *Service and Maintenance Procedures*, provided.

You are encouraged to contact AMSCO concerning our Preventive Maintenance Agreement. Under the terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. AMSCO maintains a nationwide staff of well equipped, factory-trained technicians to provide this service, as well as expert repair services. Please contact your AMSCO representative for details.

Advisory

A summary of the safety precautions to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate the sterilizer until you have become familiar with this information.

This sterilizer is not designed to process flammable liquids nor liquids in containers that are not designed for sterilization. Any alteration of the sterilizer which affects its operation will void the warranty and could violate state and local regulations and jeopardize insurance coverage.

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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Warnings and Cautions in the Operating Procedure Manual that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

General

⚠ WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Maintenance performed by inexperienced, unqualified persons or installation of unauthorized parts could cause personal injury or result in costly equipment damage.

⚠ WARNING - ELECTRIC SHOCK HAZARD: Disconnect all utilities to sterilizer before servicing. See Section 1 for expanded warning.

⚠ WARNING - BURN HAZARD: Before performing any cleaning or maintenance procedures, allow sterilizer and generator (if applicable) to cool to room temperature.

This section pictorially lists and describes all the possible alarm conditions which may occur when operating the Century sterilizer.

If a problem occurs that is not described in this section, please call your AMSCO Engineering Service representative at 1-800-333-8848 for Healthcare Sterilizers, and 1-800-444-9009 for Scientific Sterilizers. A trained service technician will promptly place your sterilizer in proper working condition.

NOTE: Never permit unqualified persons to service the sterilizer.

Typical Alarm Screen

When an alarm condition occurs, the alarm buzzer sounds and the touch screen automatically displays the corresponding alarm screen. Typically, each alarm screen indicates the alarm name, current chamber status, current sterilizer activity and operator instructions (see Figure 2-1).

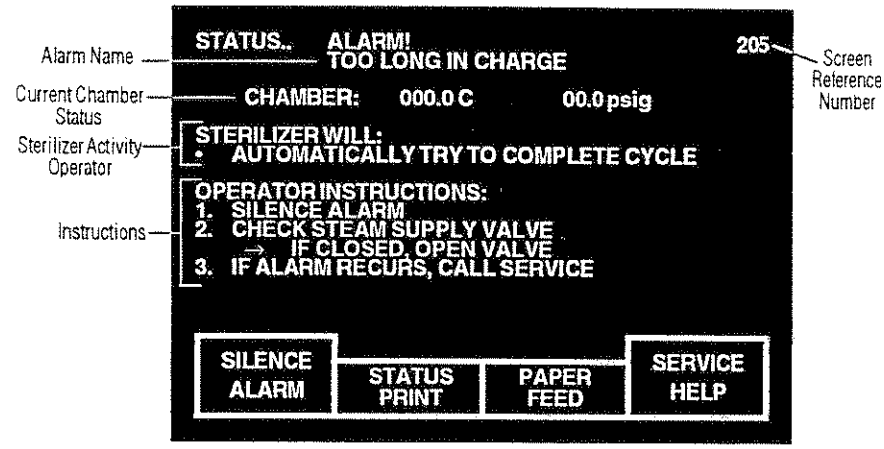


Figure 2-1. Typical Alarm Screen

Touch screen buttons, located along bottom of alarm screen, are used to perform the following functions.

- Pressing **SILENCE ALARM** turns off the alarm buzzer.
- Pressing **STATUS PRINT** generates a printout of the current temperature and pressure in the sterilizer chamber at the time the button was pressed.
- Pressing **PAPER FEED** advances the printer paper up by one line.
- Pressing **SERVICE HELP** advances display to the corresponding service information screen. This screen provides the qualified service technician with possible causes and advanced corrective actions for that alarm condition.

IMPORTANT: In the event of an alarm condition, the operator should always follow the instructions indicated on the alarm screen.

Typical Alarm Printout

When an alarm occurs the printer automatically generates a printout, typically listing alarm name, time alarm occurred, current chamber status and any associated sensor temperature. See Figure 2-2.

```
* ALARM
PRESSURE IN CHAMBER
F  10:07:23A     61.7C     34.OP
```

Full Print Format Shown

Figure 2-2. Typical Alarm Printout

Displays and Printouts

The sterilizer is equipped with a high water dump valve located in the chamber drain line. This valve will open anytime water is detected in the drain. If a high water dump condition should occur, the alarm will sound and the printer will print:

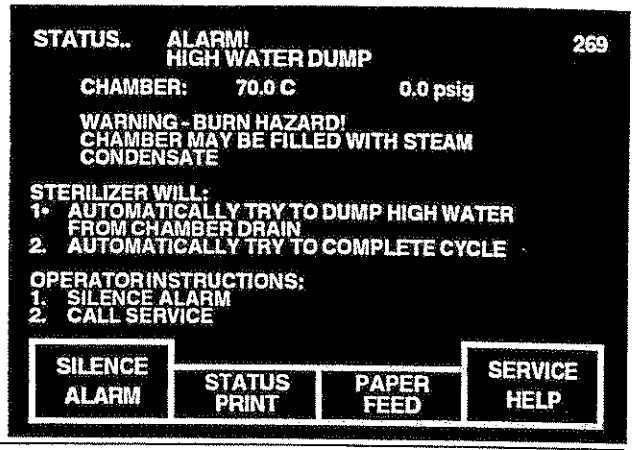
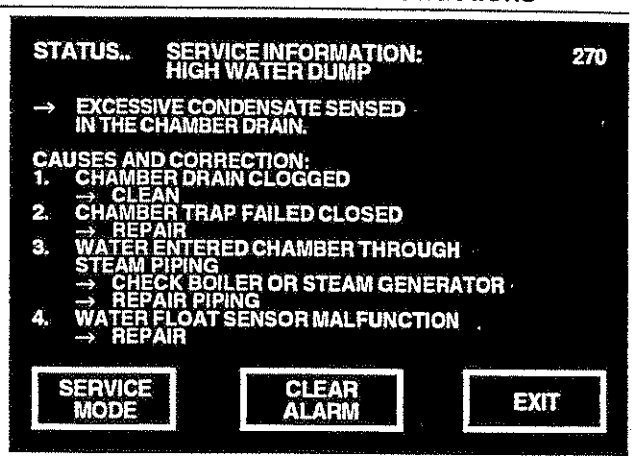
```
* ALARM
HIGH WATER DUMP
------------------
status...
```

The cycle will continue. However, problems may occur with the chamber drain temperature readings. The sterilizer control monitors the chamber drain temperature with the pressure during the sterilize phase. If the pressure does not match the appropriate pressure levels, a component failure alarm will occur (see Service & Maintenance Procedure).

Once the alarm clears, during the cycle, the alarm will silence and the high water dump valve will close.

During the ready mode (unit is out of cycle), if the high water dump sensor should indicate a flood condition in the drain, a component failure condition will occur. The high water dump valve will open. The alarm will sound and the printer will print:

```
* ALARM
HIGH WATER DUMP
------------------
status...
```

Alarm	Description	Screen with Operator Instructions
1. High Water Dump	Occurs if excessive condensate is sensed in the chamber drain. S11 (high water dump valve) will open to remove the condensate. If the alarm occurs for more than a minute, continuously, the cycle will abort. The alarm will NOT occur during the slow exhaust phase.	
		Screen with Service Instructions
		

OPERATING PROCEDURE

Horizontal Sliding Door

AMSCO Scientific

Eagle® Century Series

Sterilizer

(1-12-94) P-387344-297 Rev.0

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Printed in U.S.A.

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You are encouraged to contact AMSCO concerning our Preventive Maintenance Agreement. Under the terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. AMSCO maintains a nationwide staff of well equipped, factory-trained technicians to provide this service, as well as expert repair services. Please contact your AMSCO representative for details.

Advisory

A summary of the safety precautions to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate the sterilizer until you have become familiar with this information.

This sterilizer is not designed to process flammable liquids nor liquids in containers that are not designed for sterilization. Any alteration of the sterilizer which affects its operation will void the warranty and could violate state and local regulations and jeopardize insurance coverage.

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HORIZONTAL SLIDING DOOR OPERATING PROCEDURE

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	Interlocks	2-4
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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Cautions and Warnings in the Service and Maintenance Procedure that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

HORIZONTAL SLIDING DOOR OPERATION

2

Door Operation

Door movement on SLH sterilizers, (door may be vertical or horizontal operation) is controlled by DOOR OPEN and DOOR CLOSE buttons on certain display screens that door operation is permitted or required.

Perform the following for each door:

— CLOSE DOOR

Press and hold the button to close the door. The button will remain lit until the door closes completely or until the button is released.

If the button is released before the door closes completely, the door stops.

— OPEN DOOR

Press the button to open the door. When the door is completely open, the following will be printed:

```
* NOT READY        time
DOOR OPEN
------------------------
```

Interlocks

Refer to Section 7 (PROGRAMMING CYCLE VALUES), Change Values Procedure subsection, of Operating Procedure core manual for Interlock information.

General

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⚠ WARNING - BURN HAZARD: Before performing any cleaning or maintenance procedures, allow sterilizer and generator (if applicable) to cool to room temperature.

This section pictorially lists and describes conditions which may occur when operating the Century sterilizer.

If a problem occurs that is not described in this section, please call your AMSCO Engineering Service representative at 1-800-333-8848 for Healthcare Sterilizers, and 1-800-444-9009 for Scientific Sterilizers. A trained service technician will promptly place your sterilizer in proper working condition. Refer to Service and Maintenance Procedure, Section 7 (Trouble Shooting), Out-of-Cycle Alarms subsection for standard door alarms.

NOTE: Never permit unqualified persons to service the sterilizer.

Typical Alarm Screen

When an alarm condition occurs, the alarm buzzer sounds and the touch screen automatically displays the corresponding alarm screen. Typically, each alarm screen indicates the alarm name, current chamber status, current sterilizer activity and operator instructions (see Figure 3-1).

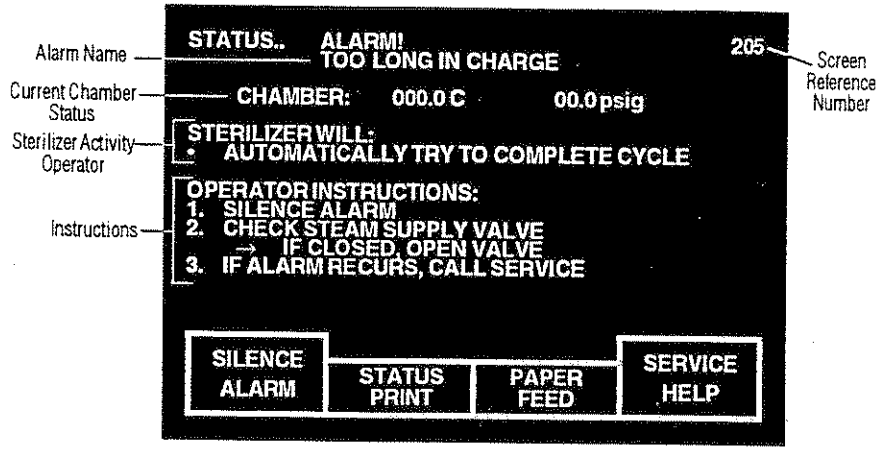
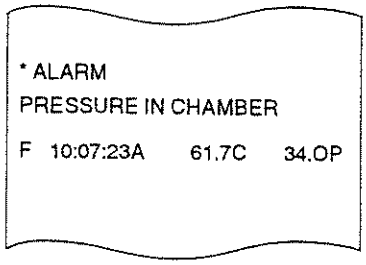


Figure 3-1. Typical Alarm Screen

Touch screen buttons, located along bottom of alarm screen, are used to perform the following functions.

- Pressing **SILENCE ALARM** turns off the alarm buzzer.
- Pressing **STATUS PRINT** generates a printout of the current temperature and pressure in the sterilizer chamber at the time the button was pressed.
- Pressing **PAPER FEED** advances the printer paper up by one line.
- Pressing **SERVICE HELP** advances display to the corresponding service information screen. This screen provides the qualified service technician with possible causes and advanced corrective actions for that alarm condition.

IMPORTANT: In the event of an alarm condition, the operator should always follow the instructions indicated on the alarm screen.



Full Print Format Shown

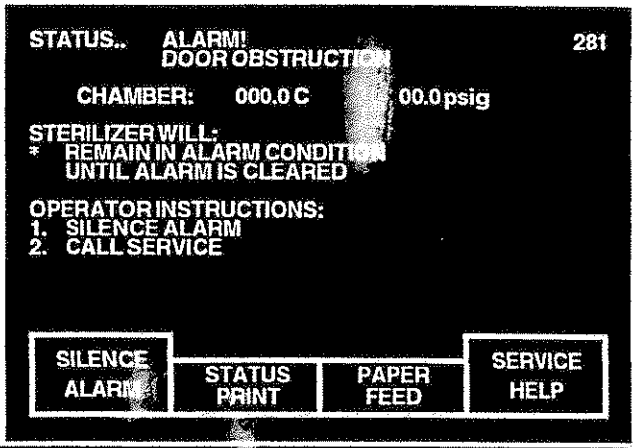
Figure 3-2. Typical Alarm Printout

Typical Alarm Printout

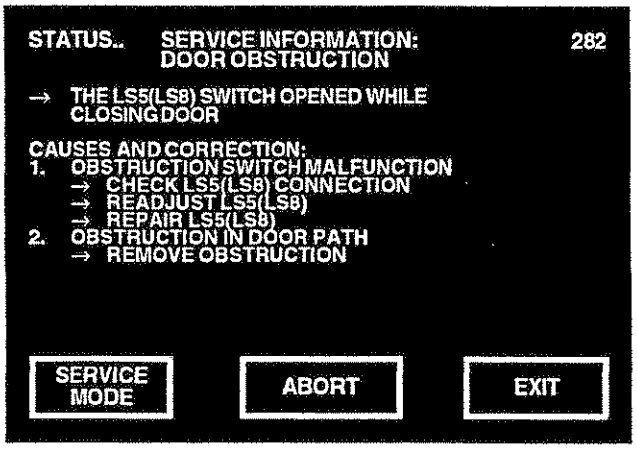
When an alarm occurs the printer automatically generates a printout, typically listing alarm name, time alarm occurred, current chamber status and any associated sensor temperature. See Figure 3-2.

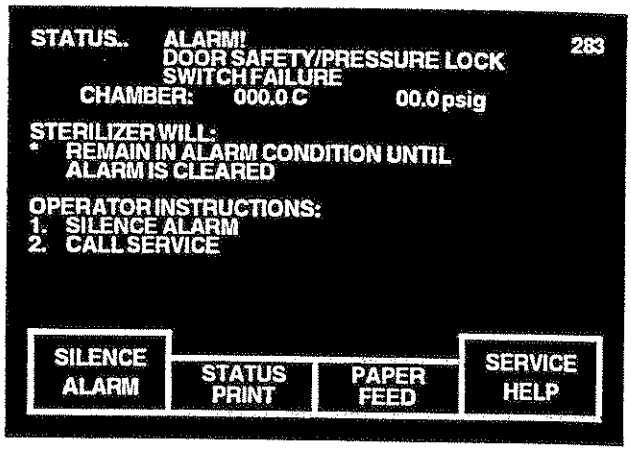
The following alarm screens will appear only during out-of-cycle operation.

Out-of-Cycle Alarms

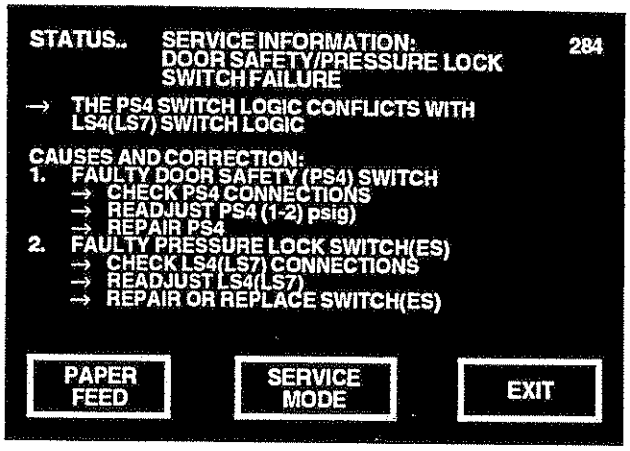
Alarm	Description	Screen with Operator Instructions
1. Door Obstruction	Occurs if obstruction switch opens while door is closing.	

Screen with Service Instructions



Alarm	Description	Screen with Operator Instructions
2. Door Safety/Pressure Lock Failure.	Occurs if Door Safety Pressure Switch (PS4) indicates that door(s) should be locked and Door Pressure Lock Switch(es) (LS4, LS7) indicate that door(s) is not locked. Also occurs if reverse is true.	

Screen with Service Instructions



OPERATING PROCEDURE

Safety Pressure Switches

AMSCO Scientific

Eagle® Century Series Sterilizer

(8-7-96)

P-387344-313 Rev. 3

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Printed in U.S.A.

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SUMMARY OF WARNINGS AND CAUTIONS

1

Refer to the Warnings and Cautions in the Operating Procedure that are to be observed when operating or servicing this unit. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. The precautions are repeated (in whole or part) where applicable throughout the manual. Carefully read all safety precautions before proceeding to use or service the unit.

General

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```
* ALARM
PRESSURE IN CHAMBER
F  10:07:23A     61.7C     34.OP
```

Full Print Format Shown

Figure 2-2. Typical Alarm Printout

This section pictorially lists and describes all the possible alarm conditions which may occur when operating the Century sterilizer.

If a problem occurs that is not described in this section, please call your AMSCO Engineering Service representative at 1-800-333-8848 for Healthcare Sterilizers, and 1-800-444-9009 for Scientific Sterilizers. A trained service technician will promptly place your sterilizer in proper working condition.

NOTE: Never permit unqualified persons to service the sterilizer.

Typical Alarm Screen

When an alarm condition occurs, the alarm buzzer sounds and the touch screen automatically displays the corresponding alarm screen. Typically, each alarm screen indicates the alarm name, current chamber status, current sterilizer activity and operator instructions (see Figure 2-1).

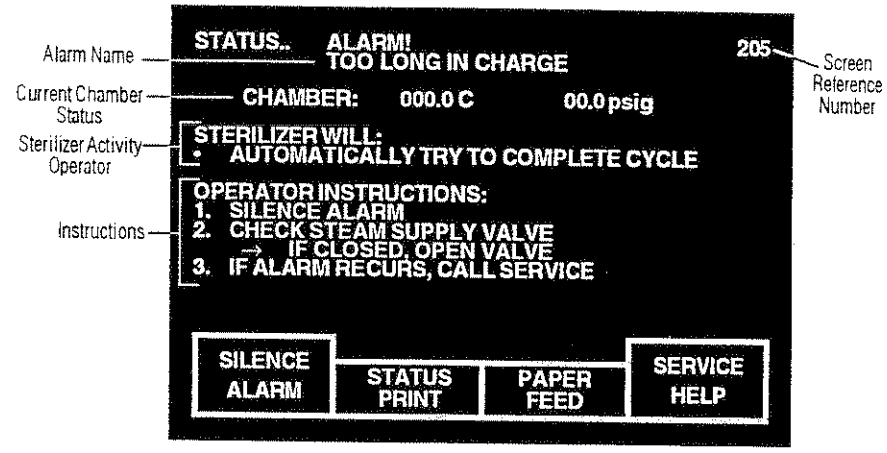

Figure 2-1. Typical Alarm Screen

Touch screen buttons, located along bottom of alarm screen, are used to perform the following functions.

- Pressing **SILENCE ALARM** turns off the alarm buzzer.
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- Pressing **PAPER FEED** advances the printer paper up by one line.
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IMPORTANT: In the event of an alarm condition, the operator should always follow the instructions indicated on the alarm screen.

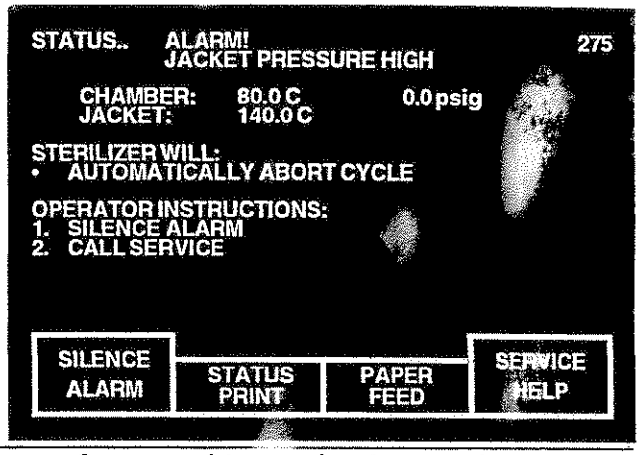
Shown below are safety pressure switches equipped on the sterilizer and the factory set pressure switchpoint and normal state of each switch.

PRESSURE SWITCH	FACTORY SET PRESSURE SWITCHPOINT	SWITCH CONTACTS
CHAMBER	38 psig or 48 psig	normally closed
JACKET	38 psig or 48 psig	normally closed

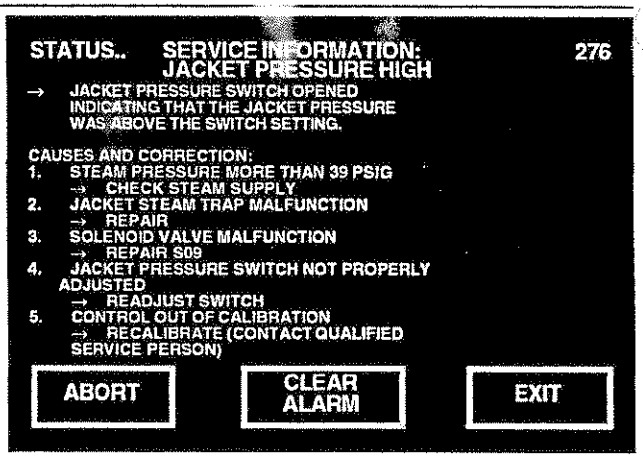
Typical Alarm Printout

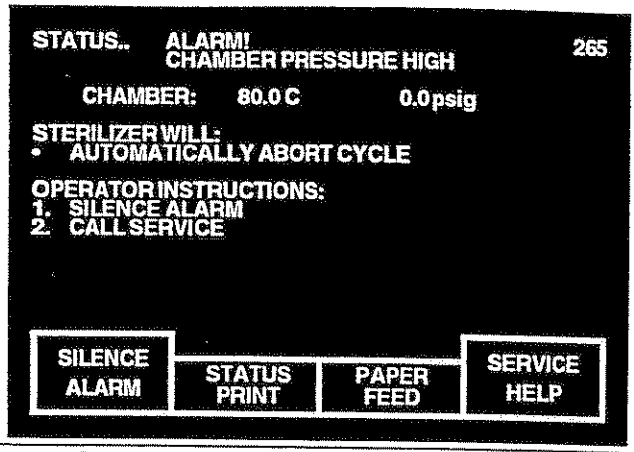
When an alarm occurs the printer automatically generates a printout, typically listing alarm name, time alarm occurred, current chamber status and any associated sensor temperature. See Figure 2-2.

In-Cycle Alarms

Alarm	Description	Screen with Operator Instructi
1. Jacket Pressure High	Occurs if the jacket pressure is high (jacket pressure switch is open continuously for a short debounce time - usually 5 to 10 seconds). Refer to wiring schematic and/or PID drawing for location and labelling of the switch.	

Screen with Service Instructions



Alarm	Description	Screen with Operator Instructions
2. Chamber Pressure High	Occurs if chamber pressure is high (chamber pressure switch is open continuously for a short debounce time - usually 2 to 10 seconds). Refer to wiring schematic and/or PID drawing for location and labelling of the switch.	

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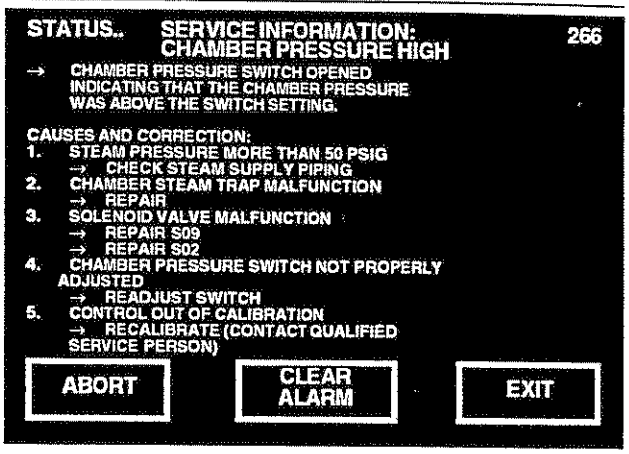

OPERATING PROCEDURE

Utilities Switches

AMSCO Scientific

Eagle® Century Series

Sterilizer

(5-12-95) P-387344-317 Rev. 1

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2. UTILITIES SWITCHES		2-1

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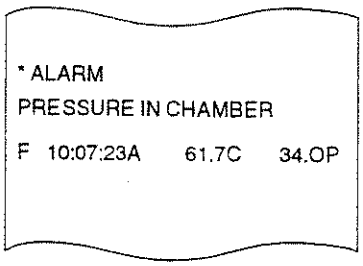

Full Print Format Shown

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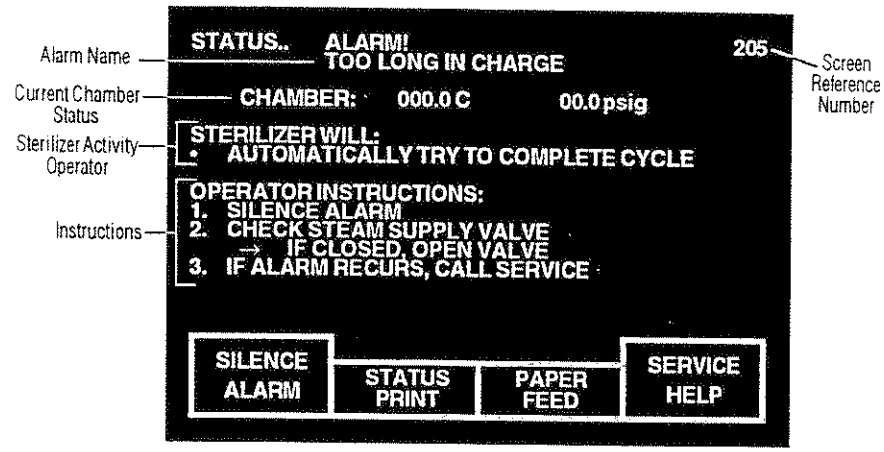

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- Pressing **STATUS PRINT** generates a printout of the current temperature and pressure in the sterilizer chamber at the time the button was pressed.
- Pressing **PAPER FEED** advances the printer paper up by one line.
- Pressing **SERVICE HELP** advances display to the corresponding service information screen. This screen provides the qualified service technician with possible causes and advanced corrective actions for that alarm condition.

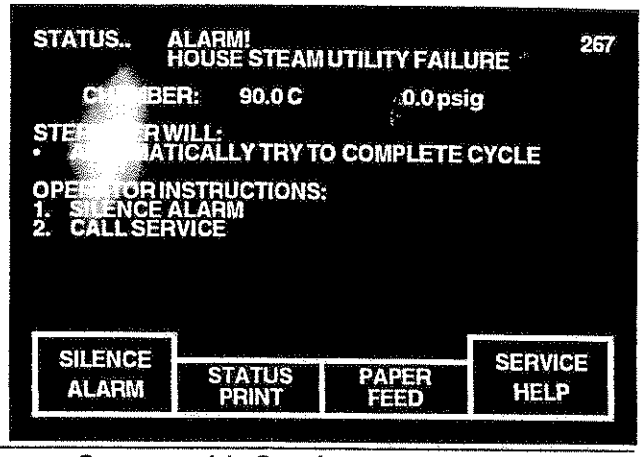
IMPORTANT: In the event of an alarm condition, the operator should always follow the instructions indicated on the alarm screen.

Typical Alarm Printout

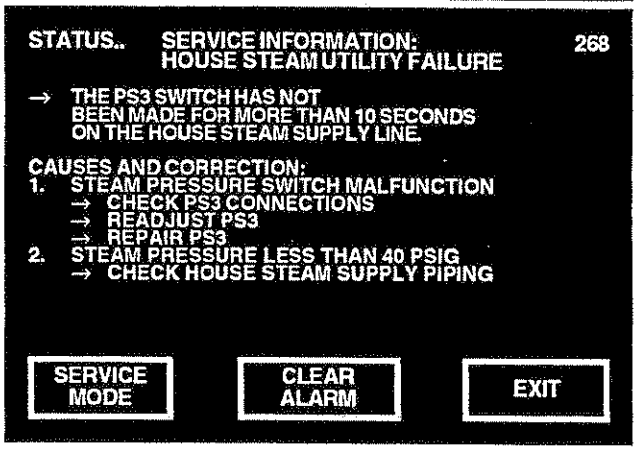
When an alarm occurs the printer automatically generates a printout, typically listing alarm name, time alarm occurred, current chamber status and any associated sensor temperature. See Figure 2-2.

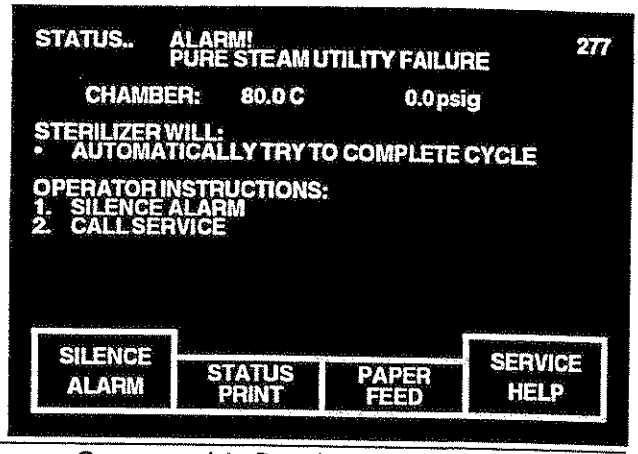
The following alarm screens will appear only during cycle operation.

In-Cycle Alarms

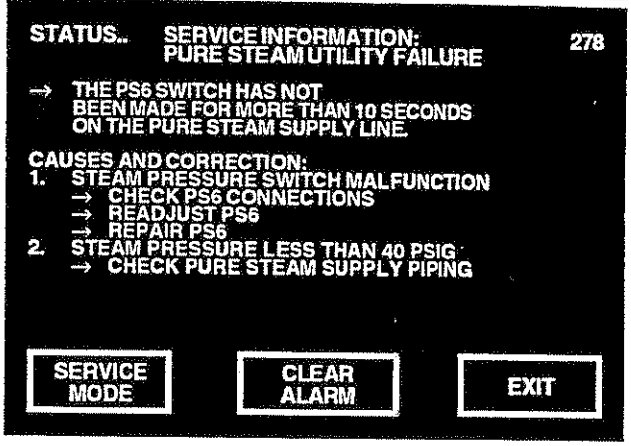
Alarm	Description	Screen with Operator Instructions
1. Low House Steam	Occurs if the house steam supply is low (PS3 switch open for more than 10 seconds).	

Screen with Service Instructions



Alarm	Description	Screen with Operator Instructions
2. Low Pure Steam Utility	Occurs if the pure steam supply is low (PS6 switch open for more than 10 seconds).	

Screen with Service Instructions



STATUS.. SERVICE INFORMATION:
PURE STEAM UTILITY FAILURE
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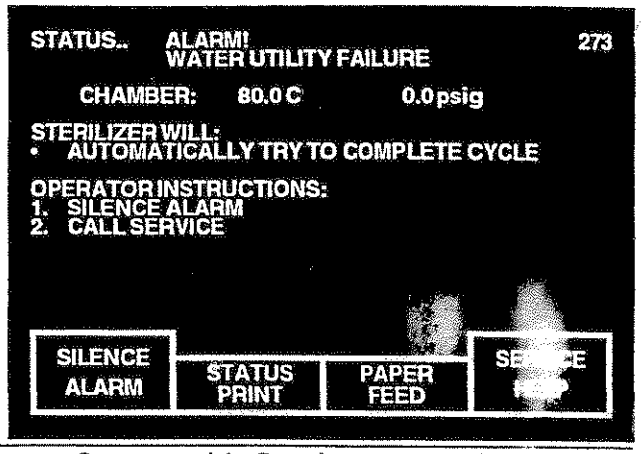
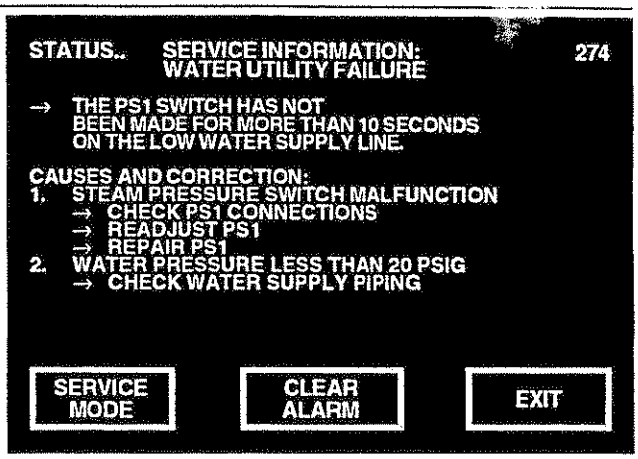
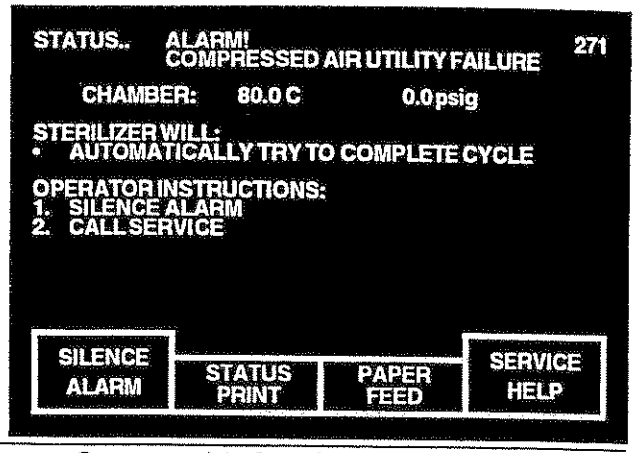
→ THE PS6 SWITCH HAS NOT BEEN MADE FOR MORE THAN 10 SECONDS ON THE PURE STEAM SUPPLY LINE.
CAUSES AND CORRECTION:
1. STEAM PRESSURE SWITCH MALFUNCTION
→ CHECK PS6 CONNECTIONS
→ READJUST PS6
→ REPAIR PS6
2. STEAM PRESSURE LESS THAN 40 PSIG
→ CHECK PURE STEAM SUPPLY PIPING
SERVICE MODE
CLEAR ALARM
EXIT

Alarm	Description	Screen with Operator Instructions
3. Low Water Utility	Occurs if the water supply is low (PS1 switch open for more than 10 seconds).	

Screen with Service Instructions



Alarm	Description	Screen with Operator Instructions
4. Low Compressed Air Utility	Occurs if the compressed air supply is low (PS5 switch open for more than 10 seconds).	
		Screen with Service Instructions